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TRANSACTIONS

OF THE

WORCESTER COUNTY

HORTICULTURAL SOCIETY,

FOR THE YEAR, 1880.

COMPRISING ESSAYS AND REMARKS,

AT STATED WEEKLY MEETINGS;

ALSO, THE

ANNUAL REPORTS OF THE LIBRARIAN,

AND OF THE

SECRETARY.

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NOTE.

The Committee on Publication regret that so few of the Essayists were enabled to furnish the manuscript of their remarks, as delivered. In a few instances, it is true, none had been prepared. The reports, in the *Spy* and *Gazette*, were so full and accurate, however, that there is less cause to deplore such deficiency.

Beyond which the Committee doubt if the Society has ever issued a volume equally fraught with instruction. Facts are clearly stated and advice is plainly given. It rests with the reader to profit by the unusual opportunity.

For the Committee.

EDWARD W. LINCOLN,

Chairman.

Hall of Flora,
December, A. D. 1880.

INDEX.

	PAGE.
Exhibiting and Judging Fruits and Flowers,	5
Manures and Fertilizers,	8
Growing and Marketing Small Fruits,	15
Window Gardening and Winter Flowers,	20
Out-Door Flowering Plants,	27
Orchard and Vineyard Fruits,	33
Does Horticulture Pay, and How?	36
Trees and Shrubs for Ornamental Purposes,	40
Report of the Librarian,	51
Report of the Secretary,	55

WORCESTER COUNTY
HORTICULTURAL SOCIETY.

A. D. 1880.

FIRST MEETING, JANUARY 29TH, P. M.

SUBJECT: EXHIBITING AND JUDGING FRUITS AND FLOWERS.

President SALISBURY took the chair at 3 o'clock.

Hon. J. F. C. HYDE, of Newton, introduced the subject, answering questions freely during the course of his remarks. Alluding to fruits and flowers he spoke of the importance of exhibiting, and considered the policy of growing, but not exhibiting, a bad one. He does not believe in going to exhibitions and saying, "I can beat that at home," as it seldom proves true. The exhibitions, he considered, benefit the public, and especially the grower, by stimulating him to a renewed effort with better success. In relation to judging, he said it was impossible to please everybody, and judges at a horticultural or agricultural exhibition must expect abuse, as must all others who take any prominent position. He urged the importance of selecting disinterested, competent persons. He believed that prominent officers of a society should not compete for premiums, as they should not leave the door open so that any criticism can be made, as people will say, "Oh, yes; you will award a premium to the president, but never to me." Then care should be taken to select proper persons as the judges, and not to get on those who know nothing about that which is to be judged. The utmost impartiality should be used, and a good plan is, not to have the names of the exhibitors appear; as there is sometimes a tendency to strain a point, and give a prize to a friend. It may not always be practicable, but on the whole, he thought it would be preferable. Societies should have their own dishes, plates, vases and bottles for exhibition purposes, as it improves the exhibition's appearance. The varieties should also be classified. Then a standard, embracing color, size, quality

and productiveness should be established, and these elements should be considered in making the awards; every specimen being examined, and the slightest defects, such as a bruise, a worm-hole, a lack of stem, or a variety not true to name, noted carefully, that nothing which does not properly belong should be considered. He cited cases where whole stands have been disqualified for slight imperfections, but he believed in the adoption of a rule and living up to it, without the slightest deviation. Deviating from an established rule always makes trouble. One thing that ought to be done is the exclusion of poor specimens by those who make up the exhibition, no matter by whom they are offered, as it injures an exhibition by lowering the standard, and leads to the depreciation of the exhibits. He considers it a difficult thing to do, but one which should be done, although it is beset with difficulties. The result of admitting everything must lower the standard, and expelling poor specimens, although for a time it decreases the size of your exhibition, will, eventually, be most beneficial, and the general standard greatly increased. In regard to judging floral designs he said he was pretty hard on them, and thought a committee on them a difficult place to put a person, and he believed in putting on a lady or two who would say *no* much more gently than a man. Baskets and bouquets he believes in, not, however, those made like a great cauliflower and as stiff; and he believed their exhibition should be encouraged in all ways. In judging them he would exclude the owner's names and get an impartial committee. A difficulty is encountered, as the style exposes the owner when he exhibits at successive exhibitions. He spoke of strawberries as coming under the same rule for exhibition, and would have the judges consider quality rather than size, as more should depend upon this feature. Roses he is much interested in, and the hybrid perpetuals, he said, would give you roses from June to frost, with proper attention. Nothing can equal them in all respects, give as much satisfaction to the eye, or awaken more enthusiasm among the growers and the public. It furnishes abundant means of enjoyment, the roses are not expensive, they need but little care, for by treating with tobacco water or whale oil soap for a fortnight, you secure strong plants, elegant flowers and luxuriant foliage. The whale oil soap should be used from a third to a half pound to a pail of water; and the tobacco soap should not be used as strong. Nothing but lightning and the fingers will keep the rose bugs away, and they should be killed by shaking into water with a little kerosene on top. Last year they were unusually thick, but may not prove as troublesome another year. In speaking of Pears, the Beurre

Clairgeau he spoke of as an excellent fruit to show, but, like the Wilson-Albany strawberry, not worth the growing. For home use a dozen varieties of pears should be grown. First, should be the Bartlett for size, quality and productiveness, and second, the Beurre d' Anjou; but beyond, the list should be made up according to the qualities of the soil on which it is to be grown. People are wofully misled by the appearance of fruit on the stands. Bartletts and Beurre d' Anjous should be grown by professionals and amateurs, but beyond this the Society should determine what can be grown with the best results, all things considered. He spoke of the process of keeping fruit by ammonia, as shown on North street, Boston, where Beurre d' Anjous have been kept a month longer than usual, and sold for $6 a bushel, instead of $1.50 as when sold at the usual time. The process by which the ammonia is condensed and the cold air forced through the building was described, the cost being 12½ cents per bushel per month. In exhibiting he believed that the purpose for which these specimens are intended should be considered, the awards not being controlled by size or quality wholly, but by all requisites. The standard should always be a high one, although seldom reached. In judging pears, he did not believe in awarding the premiums to those which weigh the most, unless, as seldom happens, there is no other difference.

In judging Vegetables he said the rule should be,—if the larger specimen of mangolds was symmetrical and round, it should take the prize, but if the offer is for table beets, the size should be only medium; it should be smooth, free from small roots, &c. In squashes size should not govern, but quality. A mammoth may deserve a gratuity to pay for lugging it in.

One good object in exhibitions is the elevation of the standard and the bringing up the public to a higher standard.

President Salisbury expressed the thanks of the Society for Mr. Hyde's interesting remarks, and they were formally voted.

SECOND MEETING, FEBRUARY 5TH, P. M.

Vice-President HADWEN in the chair.

SUBJECT : MANURES AND FERTILIZERS.

BY JOHN B. MOORE OF CONCORD.

The object sought to be obtained when manure is applied to land, is to furnish the requisite plant food for the crop then growing, or to be grown. The only other effects produced would be the mechanical subdivision and lightening up of the soil by which the air and water from the rains could more easily penetrate the soil and render the plant food therein soluble, and also the shade produced by the mulching of the surface roots, which is often beneficial to plant growth. The difference between good and poor land is in the amount of available plant food contained in the foot or two of the surface soil and its mechanical condition of fineness. Suppose two lots of sandy loam with the same exposure ; the ability of each lot to produce a crop would depend upon the amount of soluble plant food contained in the soil, and also upon the fineness of the particles of the soil itself; the finer the better, because the roots can penetrate better in the fine than in the coarse, and it will retain the water better and hold the plant by its roots firmer. The same rule would apply also to any other soils.

Manures and fertilizers, when subjected to a chemical analysis, are divided into a number of different elements that are found necessary for plant growth. About the only ones that we need to concern ourselves about are nitrogen, or ammonia, phosphoric acid, and potash. Lime, magnesia and other articles are very useful in some instances, but are usually found in sufficient abundance in our soils to supply all the want of crops. Therefore the three first named articles are what we must supply. Stable manure is to-day the great source of supply for fertilization of the soil. It is, perhaps, the nearest to a perfect manure of anything that we have, although its actual worth varies very much,—that made from animals fed upon good hay and grain being much more valuable than that from poor hay, and that from stall-fed animals being still more so than that from milch cows ; and the excrements

from the human race, the sheep and hog, being more valuable than that from the stable, cord for cord.

It is economy to save everything from these sources. But in the practical operations on a farm, or garden, we find that we do not have enough manure, after saving as much from these sources as we can to grow our crops. Certainly I do not find enough, and have to buy. A cheap and efficient fertilizer is the great want of the farmer in the New England States to-day. How shall we get it?

From the investigations of M. Ville, an eminent chemist in the employ of the government of France (and it has been verified somewhat by other experimenters), it appears that the different varieties of plants require the elements of plant growth in different degrees or quantities. One wants ammonia in large quantities, while some other species require but little. Another wants phosphoric acid, or potash in excess, while another wants but a very small quantity. Almost every variety of plant that we cultivate wants one of those three elements in excess of all others. While stable manure may, and does furnish all these ingredients required in plant growth to a certain extent, there may be and usually is a deficiency of ammonia required by one species of plants, or of phosphoric acid, or of potash required by others. Admitting these propositions to be true, and I may say that my experience confirms them, then the proper combination of the elements of plant growth becomes of great importance in the economical production of crops.

This would bring us to the consideration of other fertilizers and sources of plant food; and first those that are termed commercial fertilizers. They are prepared articles of different degrees of value, such as the super-phosphates of lime; refuse of slaughter-houses, composed of meat, blood, bone and offal, and when dried and ground, are sometimes called animal meal, ground bone, and various other articles. They are all good, but their actual value to the farmer or gardener depends upon three things, namely,—how much they cost, how thoroughly they are dissolved in the manufacture, and how much they are extended or adulterated. There are many other articles that are valuable for fertilizing purposes—such as Stassfurt potash salts, refuse of fish, leached and unleached ashes, horn shavings, and Peruvian guano. The last is very valuable if not adulterated, and in what is called the rectified form has given good satisfaction to those that have used it. In fact, these last named all have their value, which can be estimated better than when they are mixed in the manufactured article.

What is the best method of fertilizing a piece of land to pro-

duce a full crop? This is a hard question to answer, and while I do not expect many of you to agree with me in my conclusions, I shall try and answer as well as I can from my standpoint: First, a dressing of stable manure, the quantity must depend upon the crop to be grown; then apply the other one or two elements that the crop to be grown requires, in larger quantities than will be furnished by the stable manure. I can easily imagine that some good conservative farmer will say—Give my land a good dressing of barnyard manure and I will risk my corn, I don't want any of your ammonia or potash. Well! I have said that just what he is willing to risk his corn on is a first rate thing to start with. But then there are nine chances out of ten that the same farmer has really given them the additional elements that I have named. Let us see. He has composted the droppings from his hen house, and put a quantity of that in the hill when he planted his corn. Well! that is only to give the corn a good start. But he has added ammonia in which hen droppings are particularly rich, the very thing to give the corn a start, and he has put that in at the right time, and the right place, and where it will do the most good. Then the corn comes up, and at the first or second hoeing he goes over the field again and puts a handful of wood ashes about each hill, because he says that it does make it grow, and also keeps off the worms; and then he likes to see it look that dark green color, which always denotes vigor and health. There is the other element, potash; and these are the very two elements that Indian corn wants in larger proportions than are found in stable manure. There may be instances where neither ammonia, bone or potash, would do any particular good; for instance, some of the river bottom land in the west. And here let me again say that the richness of the land does not depend upon the amount of manure applied entirely, but upon the amount of soluble plant food in the soil.

I have said that the value of manufactured fertilizers may depend very largely upon how well they are dissolved. Ground bone, although pure, will be so long in decomposing, unless dissolved with acid or broken down with wood ashes, as to almost discourage one in its use, while if it has been thoroughly dissolved with sulphuric acid it is immediately available, and very valuable for plant food. The substitutes for bone, which are used to a large extent in the manufacture of fertilizers, such as the South Carolina deposits and the Canada apatite, when thoroughly dissolved, the phosphoric acid which they contain is just as good as it is from bone itself; but if not dissolved, and in its natural state, it is worth no more than so much sand, while from pure bone undissolved, plants would get the benefit of it after a few years.

Dried and finely ground meat, bone, blood and offal are not soluble until they have undergone decomposition, or have been broken down with some acid. The same may be said of fish refuse and various other articles, although they decompose readily by composting.

All cereals want ammonia as the leading element; root crops, phosphoric acid and potash; clover, phosphoric acid and potash; and, although the analysis of clover shows a very large amount of nitrogen or ammonia, the application of that to the soil for clover does not benefit that crop to any great extent.

It has been said that a chemist can make an artificial soil containing all the elements of plant growth, and that soil may still be sterile. Its potash may be in feldspar rock, its phosphoric acid in Canada apatite, its ammonia in some other form and all of them locked up in insoluble combinations. And an analysis of it by a chemist with his powerful acids, will show all of these articles in abundance, and still not a particle available for plant food. And here another very proper inquiry comes in, and that is why you cannot analyze the soil itself and find out its wants so as to doctor it understandingly. The answer is that the chemist's acid will truly discover all that there is in the sample tested, and show an abundance of plant food when there is really nothing available. It is not sufficient that the soil contain all that is necessary to plant growth but it must be able to give them to the plant in due quantity and proportion.

Dr. Nichols estimates that a cord of barnyard manure weighs 3000 pounds, divided as follows: Water, 2456 pounds; sand, 138 pounds; carbonaceous matter of no more value than straw, 332 pounds; leaving only 74 pounds of really valuable matter. This is divided again as follows: Nitrogen, $2.60; potash, equal to 1½ bushels of wood ashes, $0.35; salt, bone and gypsum, $0.50; carbonaceous matter, $0.10; value of the cord of manure of 3000 pounds, $3.55. Dr. Dana says that a cord of fresh cow manure weighs 9289 pounds, in which there is 7728 pounds of water. I call your attention to this because men who are canvassing for the sale of fertilizers, are very likely to, and do call the attention of farmers and gardeners to the enormous expense to which they are putting themselves by hauling to their fields this great amount of water in a cord of manure, 7728 pounds! and they go on and tell them that it is no better than ditch water. And that is true after all the elements that promote plant growth are taken out. But does not much of the value of manure come from the fact that it is so finely subdivided by passing through the animal organism, and being in the finely diluted condition found in the manure and water; and then when one says that the water is use-

less can you believe it? I certainly cannot, because I know that in the cultivation of plants in a greenhouse the perfection of growth and fertility comes from the use of liquid manure. Why? because the fertilizing matter is so minutely diffused that it presents itself to the plant in that form that is immediately available and readily assimilated and taken into its circulation. How far the use of liquid manure would be practicable in field or garden culture I am not prepared to say, but that it would accomplish great results as to the production of crops I have no doubt whatever; there may be too much labor and trouble in the application to be profitable. And now, after showing the uses of water in plant growth, I should be unwilling to admit that the water in manure, even divested of all the salts, is of no use.

Our own bodies are made up, chemically speaking, of a large portion of water. We find it necessary to our health, growth and comfort, and we believe in it as a class, although once in a while we find a person who, if we judge by his appearance, does not approve of it even for washing purposes. There are 92 parts of water in 100 of turnips, and who thinks it wrong to feed them to cows at the present prices of milk. The meats, fruits and vegetables, in fact almost everything we consume, is, when divided up by the chemist, found to be largely made up of water. Without water we cannot grow anything. With water, by irrigation on meadows, we can increase the grass very much, even from the very small amount of plant food contained in it.

In the analysis of manure by Dr. Nichols, three-fourths of the value was in the nitrogen, $2.60 in the cord. It is an article that is very volatile, and therefore liable to waste; a small quantity of plaster of paris, or dry earth, does much towards holding it. Prof. Johnson's analysis of certain plants from their ashes, and to ascertain the amount of potash they contain: 10,000 pounds of turnips and leaves show 56 pounds of potash; 10,000 pounds of carrots without leaves, show 35 pounds of potash; 10,000 pounds of parsnips without leaves, show 21 pounds of potash; 10,000 pounds of potatoes and their tops show 122 pounds of potash; 10,000 pounds of potatoes is 166⅔ bushels of 60 pounds, nearly ¾ to every bushel; 1000 pounds red clover has 20 pounds potash; 1000 pounds white clover has 31 pounds potash.

The exhaustion of potash from the soil you will see is quite large. The same is true of bone or phosphoric acid, more particularly on farms where the selling of milk is the leading business, a large quantity being sold in the milk itself. To keep up the fertility of the soil, these two articles must be supplied in some form sufficient to replace the loss. Potash and bone are said not to waste to any extent, either by evaporation or leaching.

The last part of the question as to the best and most economical method of applying manure, is a question upon which there will be a great diversity of opinion, but less, I think, after testing fully and fairly the different methods.

Once it was all to be composted, two cords of peat or loam and one cord of manure making three cords, each of the same value as the manure. Then came barn cellars, and with them the idea that we could fill them nearly full of peat, loam or sand, and that it would all come out in the spring, manure. Where these weak preparations from the cellar were put to the test of a crop, it did not do the business, and then the cry was, barn cellar manure wasn't good for much, and it was some time before some of us found out that if we did put the ten cords of loam or sand into the cellar, and dropped down only about one cord from the cattle, we really had only about one cord, after all, and that all that ten cords of loam except what might be sufficient to soak up the liquids, had been carried there more as a mistake than for any practical purpose.

Now as to the application; I do not propose to say to you that this or that method is the best. But I shall simply tell you how I should apply manure for my land, and to produce such crops as I might wish to grow. The base of the manure that I should use for almost any hoed crop, would be barnyard or stable manure. And here let me say that I believe in a good, liberal dressing, of course adapted to the crop to be grown. Now, what might be a good dressing for corn or potatoes, might not be enough for some garden vegetables, particularly where more than one crop is to be grown without additional manure. Eight cords of manure, 400 pounds of sulphate of potash, or, instead of that, 35 bushels of wood ashes, is none too much for a crop of onions.

Ten cords of manure, 300 pounds of muriate of potash 80 per cent., 100 pounds dissolved bone, is none too much for a crop of cabbages on sod land after a crop of early cut hay, the land to be seeded to grass just before winter, and grass follows the cabbage better than any other hoed crop.

Six cords of manure, 300 pounds sulphate of potash 57 per cent., and 100 pounds dissolved bone, does the handsome thing with me for a crop of potatoes. 250 pounds dissolved bone, 250 pounds muriate of potash 80 per cent., 50 pounds sulphate of ammonia 24 per cent., 100 pounds plaster of paris, makes my grapevines grow on a poor gravelly soil as strong as I want to have them, and they fruit abundantly.

In seeding land to grass, which I always intend to in the months of August and September, or if I do not have time then, I leave it until just before winter sets in, I use the manure

made from the cattle, horses, and swine. Of the latter I keep quite a number, and there is more or less waste material from the farm put in their pens. The land having been ploughed at a considerable expense, it is economy to fertilize it well, and I think there is a better return from the manure applied when seeding, than as a top dressing. If I desire to top dress grass land I have found the following articles mixed to be a good application; they should be sown broadcast early in the spring: 150 lbs. nitrate of soda, 100 lbs. muriate of potash 80 per cent., 100 lbs. dissolved bone, the whole costing from $9 to $10 an acre. Do not sow nitrate of soda in the fall.

I have recommended to some of my friends who are market gardeners, sulphate of ammonia for the purpose of a quick action in hurrying up a crop of dandelions in the spring, as one week makes a large difference in the price which they can be sold for. This has been attended with very good results in most instances. In one experiment in its use, the person who used it on one half of the piece without any appreciable increase in the product, I asked him what manure he had applied before sowing the crop. The answer was 15 to 18 cords of stable manure to the acre. With the large amount of nitrogen in the stable manure—more than the crop can possibly utilize, there was no wonder that the additional amount of ammonia did not produce any effect.

The best preparation for plants in pots is to start right in the first place; two or three inches deep of the top of an old pasture of rather stiff loam, piled up with the sod downward, and allowed to rot six or more months, makes the best potting soil. This can be varied by adding sand or leaf mold from the woods, or peat, as the plants may require. Do not sift it, but use it coarse, and in all pots over three inches give good drainage. This may be enriched by old rotten manure to suit the plant. Do not overpot the plants; repot when the roots are in action, if necessary, and afterwards give liquid manure if the plants need stimulating, just as buds are swelling to increase the size of the flowers.

All the manures that I have mentioned are spread broadcast and worked in with a Randall or other harrow thoroughly. I have applied manure directly from the stable in the fall and winter as a top dressing to land to be planted the following year, and am unable to perceive any loss on my land, which is tolerably level. If there is no loss it would be an economical method of application.

I have stated to you my theory and practice. My theory is that the different varieties of plants that I cultivate want ammonia, bone, and potash in different quantities. My practice is to study the wants of the plants themselves, and endeavor to furnish them those articles in a soluble state amply sufficient for their wants.

THIRD MEETING, FEBRUARY 12TH, P. M.

Vice-President O. B. HADWEN in the chair.

SUBJECT: GROWING AND MARKETING SMALL FRUITS.

The subject was introduced by Mr. WILLIAM H. EARLE.

He said he would speak only of such varieties of fruit as will repay cultivation. After a general allusion to the pleasures of fruit culture, he suggested that a currant bush or a grapevine take no more room than a burdock, and a strawberry plant no more room than a small weed. A small area of ground properly handled will supply a large family with fruit throughout the season. Ten square rods will give $100 worth of good fruit, and it is a much better investment than to buy the wilted stock found in the markets.

The first essential is a properly prepared and fertilized soil. There is as much difference in ground as in people, and an acquaintance with one is as essential as the other, if pleasure or profit is the object of cultivation. As the speaker is to read a paper on "Does Horticulture pay, and how," he withheld a further statement, and asked general questioning.

He recommended for general growth, Blackberries, in which there is increasing interest; Kittatinny being the best, if fairly protected, very prolific, free from briers, a free bearer. The Wachusett and the Snyder are also good. They require little fertilizing; good corn ground with mulching is all. They should be pruned when growing, nipping the main stem and taking off laterals when eight inches long. Four feet high is enough.

A listener said his Kittatinnys cost him $1 per quart; Mr. Earle said 21 rods of rows, in '77 gave 509 quarts at 25 cents per quart, or $1400 per acre. He did not fear glutting the market; really good blackberries will sell; they will pay at 15 cents per quart. New Jersey growers are delighted with a return of 6 cents per quart over expenses. He would cut out the old wood in the spring, rather than in the fall, as the old wood supports the new against the snow. He would grow the three named varieties, to have a succession, as they ripen at different times. He would not prolong the season too much with any berry.

He had been disappointed in Raspberry culture. He thought

they all need winter protection. The black-caps are not attractive nor desirable; the red berries are next to strawberries in value; the market can not be glutted. [Mr. Midgeley—Oh yes, yes, I've done it.] I think it would be safe to pledge 12½ cents per quart for all Worcester will grow for three years. The Clarke is the most desirable variety. The "Thwack," a new variety, is highly commended.

Strawberries are pre-eminent. They need well-rotted manure, unless applied in the autumn as a mulch. He would plant so that the crown will come just even with the soil, and would press the soil very closely; be sure to set them firm; and they will live almost always; don't let soil get upon the crown. Plants from a distance should be opened and laid in a cool, dark place until ready to set; the leaves should not be wet in shipping; shipped plants will shrink 50 per cent. with almost any care; trim the roots so as to remove all injured or decayed parts. Of varieties he said the Charles Downing is at the head of the list; for market but few varieties are needed. Next to the Downing, the Jucunda is desirable on a strong, rich soil; the Monarch of the West is good; dries off well and is firmer than the Downing; a good shipping berry. The Downer's Prolific is the earliest, fine flavored and prolific and hardy. He recommended among the new berries the Sharpless as worthy of further trial; Crescent Seedling is fourth rate, about like the Wilson but more prolific. Wilson has become run out in this vicinity. [Strong opposition to the denunciation of the Wilson was shown.] Crescent Seedling is not a good shipper. He said the Wilson is a deceiver; it looks ripe two days before it is ripe; if picked early it will ship safely and keep on a stand, relieving a retailer from loss: but Horticulturists ought to repudiate it except when perfectly ripened, and then it is as tender as the other varieties. Crescent is a pistillate and needs a companion. The Sharpless has a bad form but good quality, and is very productive. In place of the Wilson as an acid berry, he recommended the Capt. Jack; it has a strong stem, holding the fruit up from the ground. The Glendale, as a new late variety is valuable. Of early berries the Duchess is desirable, but it makes but few runners; the Duncan is of a similar habit. He thought the Sharpless will do well on sandy soil, with plenty of manure. Another berry, the Pioneer, is also likely to be popular. The Sharpless is about as early as the Charles Downing.

He considered the growing of Plums desirable; a little gas tar burned under the tree every other day, from blossoming till the fruit has a thick skin, and the curculio can be successfully fought.

Mr. Thomas A. Dawson said the Sharpless, with one year's experience, is very productive, but as late as the Jucunda. He had

grown Wachusett Blackberries several years, and gave them preference, for flavor and productiveness. He believed in high manuring; it gives more and larger berries; full top dressing of hen manure gives big results. From 400 plants he picked 1255 boxes of Wachusetts the second year and got $215 for them. He thought there was danger of glutting the market with blackberries as there are many other fruits in the season, but he had never had enough; his crop averaged 20 cents last season.

He had grown Kittatinny; got great growth but they winter-killed; he had 300 plants but in three years he got less than a dozen boxes, while Wachusetts will stand anything.

The Chair called attention to the fact that Mr. Earle endorsed Kittatinny on rich, warm, sheltered soil, while Mr. Dawson condemns it on an exposed site. Both are probably right.

Mr. Midgeley said if his Wachusetts do no better than heretofore, he will plough them up; Kittatinnys with him are as with Mr. Dawson, no crop at all; he did not manure heavily. He had manured Snyders heavily, with good success.

Mr. F. J. Kinney said green manure will make vines; it is best at the start, but to keep a crop going well rotted manure, or commercial manures, are probably best. He said the Pride of the Hudson Raspberry is a failure only by not being hardy; it is half-hardy; no raspberries are hardy; it is one of the very best, and only needs little protection. He commended the Brandywine as the only really hardy raspberry, and it is an excellent one.

He had grown Blackberries,—Wachusett and Kittatinny,—but the latter winter-killed; it is a better fruiter than the Wachusett; the Wachusett is not thornless; the Snyder suckers but slightly, which is an advantage.

He endorsed the Downing and the Jucunda as best among Strawberries. He approved the Crescent; it proves most desirable on his ground; very hardy, prolific and good size; the flavor is deficient, but it sells readily; it comes to market looking exceedingly well. He was morally certain that berries have been shown here as Crescents which were not true. Crescent is far better than Capt. Jack with him; the latter blast easily; they require a Jucunda soil, but are not half so good. Sharpless and Monarch of the West want strong soils; Sharpless has proved undesirable with him; Glendale is a nice berry, but its thin foliage allows too much sun. He also objected to the Duncan as useless; of the new kinds, Centennial, and the Great Republic, prove among the best.

Of Grapes he said he had two tons last year; wherever high manuring was practiced he had mildew, but with plain culture they did not mildew.

Mr. EARLE said the Crescent strawberry had generally been condemned by his patrons; they said they didn't want any more of that kind.

Mr. JAMES DRAPER said the Kittatinny blackberry did well with him two years, and then it went back on everybody. Wilson's Early was similar in his experience; but Wachusett has stood the racket for ten years, and is far ahead. He believed in high manuring for blackberries. It should be applied green in the fall, close to the roots. In raspberries he said the market glutted easily, in his experience, until he advertised them for canning. He did not like the Brandywine; it had gone "way out of sight." The Philadelphia is the only reliable berry.

Mr. MIDGELEY said his raspberries last year averaged 19 cents per quart.

Mr. EDMUND HERSEY, President of the Hingham Agricultural Society, was introduced. He said the Worcester of 35 years ago, when he last saw it, was quite different from what he saw to day; but the interested audience indicated that green fields are not far away; he was glad to be among those who could teach him. He began as a grower of Peaches at four years of age, and at six was in the Nursery business as a grafter of trees; he has kept up his practice, but did not pretend to extended experience, although he began over fifty years ago.

He said of all the small fruits the Cranberry is especially important. Almost every farm has a favorable spot for its culture, but there are few farmers who realize how much importance it deserves. He thought it easier to make $100 on cranberries than $50 on strawberries. He thought this crop more susceptible to rule than the strawberry crop. The proper location is a good porous peat bottom, with water to flood the ground at any season, and to keep it covered a foot or two deep in winter; a sand bank near by is essential. Such a spot is worth $500 per acre, and can often be bought for $10. So much the better. The top of the land should be removed down to the peat; the soil removed goes to the barnyard. The peat should be covered with sand, three inches deep, in winter, when the soil is hard; vines should be set in this sand. In selecting varieties, quality and productiveness are important. He exhibited cranberries as sold from natural meadows, and others from cultivated ground, between which there was a decided difference in size and appearance. The cultivated variety shown, he said, will produce four bushels to the rod, but it is too light colored; if a dark berry

could be secured it would be most fortunate. A solid meat and thick firm skin should be preferred.

He would not set vines in rows, but in irregular shape, not leaving a spot six inches square without a plant. The bare sand gets hot in the sun, and scorches the young runners. If properly set the ground will cover in two years. The cranberry will grow on 3½ feet of clear sand without fertilization, and give a good crop for twenty years. He thought the use of the peat to be to draw off the water; the cranberry wants water in excess for eight months, and extremely dry hot soil for the other four. He couldn't raise cranberries on cold, springy land, wet all the year round, but could grow good ones, but not to a profit, on a sand bank. There is but little cultivation required, beyond pulling the few weeds for the first year or two. They will yield $300 per acre with no expense, except gathering. He would pick only with the fingers; a rake will destroy the keeping qualities of the fruit; he keeps them from one picking to another, in a basket in the cellar, covered only with a paper. He thought the soil should drain a foot and a half below the fruit, or less if there is a scarcity of water for flowing. The flowing is to keep the frost off the fruit-buds in the spring and the fruit in the autumn. There is a worm also which attacks the vines; it winters in the grass, and winter flowing kills it. Fine gravel may be used, but sand is best for a bed. Cranberries can be grown on high land, good corn ground, but it is hard to keep the grass out on such land.

The Chair expressed the pleasure of the Society in the information from the last speaker, and in regard to the varied statements in the general discussions of the meeting, he said they only represent the result of experience with various forms of culture, various soils, &c. He thought all raspberries should be covered; after a rain, when the vines are supple, turn two rows together and throw on a little loam. Even the so-called hardy kinds will repay this care, in better crops and more and larger berries.

FOURTH MEETING, FEBRUARY 19TH, P. M.

Vice-President HADWEN in the chair.

SUBJECT: WINDOW GARDENING AND WINTER FLOWERS.

The subject was introduced by Mr. WILLIAM G. STRONG,* of Newton, who declared that Window Gardening should never be carried on to the exclusion of light and air from a house. He considers, however, that every one needs a pet to avoid the evils resulting from selfishness, and believes that under the head of pets plants are to be properly classed, he believing in small doses, an intimate personal acquaintance, that the full benefits of them may be derived and a full knowledge of them be obtained; as it can be done only by drawing near to them by watching for the recognition of our care. He believes in the daily influence of plants, to obtain which they must be brought into the house, but he counselled against carrying window gardening to that extent which shall shut out the light and air and make the home dark and gloomy. In this connection the essayist said:

But in our sunny clime, and with our modern skill in construction, and considering the cheapness and admirable non-conducting qualities of glass, it would seem that every one might freely indulge in household plants, and yet have no lack of sunlight. If we were to plan the building of a house, the wise course would be to construct a corner, or a bow-window, with special reference to plants, devoted mainly to this use, and so well arranged that the plants shall flourish in all the luxuriance of a tropical home. To do this only three conditions are requisite, namely, proper heat, moisture and sunlight. Surely you can provide for all these, if you will but plan beforehand. For the majority of flowering plants you want an average temperature of 50 to 60 degrees at night. Hence the register must be near enough to do the work. But even in sunlight it is not well to go above 80 degrees. Shades may therefore be necessary to some extent. A discussion has been going on recently in one of our popular periodicals as to the fact whether plants received nourishment from the air. I am one of the number who believe that the vigor of trees and plants depends very largely upon the condi-

Ex-President of the Massachusetts Horticultural Society.

tion of the atmosphere. We all know how rich and luxuriant is the vegetation in a low and protected valley. Now the richness of the soil is not the only reason for the strong contrast with the growth of the windy hill-top. The dewy breath of the vale bathes the foliage with moisture, while the dry breezes of the hill cause a constant and excessive evaporation from the leaves. Is it any wonder that in the latter case the growth is pinched and dwarfed? Now, if we want vigor, we must imitate the conditions of the dale. The air of our living-rooms is generally too dry for the best development of plants. We want to devise ways by which we can shower the foliage once or twice each day. If we could shut off the bow-window by means of glass doors or even curtains, so as to retain a close moisture for a considerable time, it would greatly invigorate the plants. Every gardener knows, or ought to know, the benefit of shutting up his greenhouse early and then showering and steaming his plants under a high temperature. Just this we should like to do with our house-plants if we could plan for drainage and to shut off from the living-room. Of course we can do this to perfection, on a small scale, in Wardian cases, and with complete success in the production of flowers as well as foliage, if we attend to the conditions. Wardian cases have been principally used for the culture of ferns and foliage plants, which do not require a full exposure to the sun. But by providing for free ventilation they are admirably adapted for the culture of flowering plants, so that the most difficult may be brought to the perfection of bloom even in your parlors. To obtain the best results for plants which require a uniform and high temperature it may be necessary to provide a slight bottom heat for the case. But this may be done so perfectly by means of a kerosene lamp, with a chimney leading any smoke or gas into the open air, and at such trifling cost, that it is a plan well worthy of adoption by those who wish to cultivate the most delicate exotics to perfection. The plan is simply a house within a house, where the conditions of heat and moisture may be under perfect control. You may in this way so regulate your apparatus as to obtain the highest possible degree of excellence in culture, either in richness and profusion of bloom, or in varied effect in miniature landscape, with sunny side and shade, with rocks and waterfall and lakes and grottoes. But notwithstanding the perfection which may thus be obtained in a limited way, I, for one, should prefer that the plant-room itself should be so well appointed as to secure the full and natural development of the plants, with free and open access, so that we may actually sit under the shade of orange trees in full fruit, and find a grateful shelter from the too direct rays of the sun, as I have

done during the most stinging days of winter. Let me tell you how I have altered a cottage-like home in Newton. When I bought it, it had a veranda running almost entirely around it, with cornice, or coping, which came down to within eight feet of the floor. However pleasant this might be during the summer season, it was apparent that the house must be dark and shaded during the winter. As a simple and complete remedy for this I enclosed the veranda on the south side with upright sashes, and, presto, the whole south side of our house is changed into a glass conservatory, which is flooded with light. Our very next problem, but of course an easy one, was that of regulating this blaze of light by means of shades. Heat was provided by means of an additional hot-air pipe from the furnace. A temporary double roof is provided, 8½ feet above the floor, to prevent the heat from rising to the roof of the veranda. The entire structure is temporary and of the simplest form, costing but $80. We remove it in April, and put it up again in November of each year at a trifling cost of time. The result is that we throw open our front doors and windows, not again to be closed during the entire winter. We close our furnace in the morning of every bright day, however cold it may be, and yet the whole house is radiant with the light and warmth and fragrance from the veranda. Considering its heating capacity in bright days it is a question whether we ought to debit anything to the account for fuel for cold nights. At any rate, the item is very small. I do not say that in so large a room, which is kept so open and from which we are continually passing out of doors, we could obtain luxuriant growth except by means of cases and a more confined temperature than I have provided. But we have no difficulty in keeping oranges, palms, acacias and kindred plants in perfect health, while camellias, azaleas, cytisus, carnations, and all the Dutch bulbs develop their blooms to perfection.

So great is our success, attained so easily and with so little cost, that it is a surprise to me that more do not adopt this plan of glass protection from the winter cold, this trap to catch the sunbeams, this annexation of a bit of the tropics to our northern homes. Can you not plan, my friend, how you can enclose your porch, or your piazza, or some projection of your house, or build out a bow-window or an annex, so as to secure all the advantages of sunlight in your dwellings, and also give you all the enjoyments which come from an intimate daily study and care of plants?

Considering the care of plants, he said love of them is the first requisite, and definite rules cannot be laid down. I will admit, however, that there are a few general laws of health which it is

well to follow. There is danger of over-watering plants in the winter time. A cold, wet and stagnant condition of the roots is very injurious. On the other hand, the air of living-rooms is apt to be dry and hence the draft of sap from the leaves is severe, therefore the plants must not be allowed to get too dry. See that your pots have thorough drainage with crocks, and water only when the pots look dry; a good soaking with water about as warm as the blood. The leaves of plants will sometimes become dusty in the house, and may be benefited by being washed with a soft sponge. Better by far is a strong stream of water to remove dust and also insects, wherever it can be applied. Oftentimes a hot bath is the easiest way to be rid of aphis and red spider. The water should be in a wooden pail or tub to hold the heat at 120°. The plant is to be plunged head foremost into the hot water and withdrawn within five seconds. A second and shorter plunge will wash off all remaining insects, if followed immediately. This is a short and effectual process for most insects, and is not injurious to plants except in rare cases of tender and succulent growth.

In regard to feeding plants, let me say I know of nothing that will compare with the liquid from the stable. Let it be dipped from a barrel and as free as possible from sediment. There is not much danger of using too strong liquid from cow manure; from the horse the liquid is stronger and better, but should be much weaker. When plants are in vigorous growth and are needing nourishment, this food may be applied once a week. By watching you can detect whether the plant will bear more, or is over-fed. Guano water, used with great care, is the next best food, in my judgment. Weak potash water is excellent to correct acidity and destroy worms, as well as to fertilize. Preparations known as plant-food are expensive, and have not given me such results as I anticipated.

Now as to varieties, what can I say to you, but—take your choice? If you will but treat them well, there is an army of candidates willing to enlist. You can manage almost anything which does not require close stove heat and moisture. Even this you can have in the Waltonian, or modified Wardian case. But undoubtedly there are some classes of plants better adapted to house-culture, and more effective than others. Geraniums, especially in the horse-shoe and tri-colored varieties, are always attractive by their fine foliage and bright colors, and they do remarkably well. Cytisus racemosus, the common broom of Europe, is an exceptionally good variety for house-culture. Its delicate foliage is pleasing; it is very floriferous, and the bright canary color is sunny and cheerful, while the delicious lemon-like fragrance is

pervading, but never overpowering. Probably no class of plants is more profuse in gay flowers of nearly all shades of color than the Azalea Indica. In the summer time it is best kept in pots in peaty soil in the open air, where it sets and matures its flower buds for winter use. Hence all the strength is stored away beforehand, as is the case with hyacinths and other Dutch bulbs. You have only to develop the flowers in winter by a gradual process and the result is certain, complete and superb. The same is true of camellias, only they are a little more difficult to manage and are more sensitive to the heat and dryness of a room. The effect of an orange tree, well loaded with fruit, is very striking. The fruit begins to ripen in the fall and will hold until March, when the tree throws its blossoms and fills the air with its delicious fragrance. It is of easiest culture and well adapted to the house. I might wander on and weary your patience with an almost endless list of plants, but to what profit? Let me rather turn upon one of my hobbies, and say a few words in conclusion upon the winter culture of the Rose.

Why is it that there is such poor success in forcing roses in pots? Perhaps I have asked a very foolish question in this audience. Perhaps you can produce fine specimens of Safrano and Bon Siléne, and Isabella Sprunt and Niphetos, or possibly the more difficult Devoniensis or Souvenir de la Malmaison, or even the Marechal Neil. Well, I am glad if you can. I should like to come and see how you do it. Still I think it is true in the experience of most, that the house-culture of these varieties is not usually satisfactory in its results. The plants are generally weak in growth, and give few and feeble blooms. It is true that the air of our rooms is not favorable for the vigorous growth of the rose. It is so warm that the growth starts too quickly; it is so dry that red spider is likely to draw all the life from the leaves. These difficulties you who love and watch your plants can and will overcome. And yet they do not bloom as you feel sure they would if all their wants were satisfied. This experience of yours in the house-culture of the ever-blooming varieties, the Teas and Noisettes, is precisely the same as the gardeners are passing through in the winter-forcing of the hardy perpetual varieties in the greenhouses. Ever-blooming kinds they know how to force, but why is it, they ask, that when they start their hardy kinds, they break weak, and the young shoots, though they grow rapidly, do not show flowers? The reasons are probably the same in both cases and are two-fold. First of all, the plants have been started too rapidly and have developed at the top before the roots have become sufficiently active to sustain and impel the growth.

This quick starting is sure to cause the best prepared plants of

Hardy Roses to go blind of flowers. It is of the greatest importance that the roots of all varieties should become active in advance of the tops, so as to become the impelling power. Beware lest you invert the process and cause the leaves to become the pumping power. It is well to treat your pot roses as you do Dutch Hyacinths; plunge them in a cold frame in the fall, or in the cellar, anywhere that you can keep the roots warm and comfortable while the tops are cold. See that the young and white roots are pushing strongly before you bring the plants into the house. Let them start slowly, as in the case of a lingering spring, and you will have shoots and foliage, as well as bloom, which will delight the eye. But no, this is not all; one more condition back of this we must have, if we would avoid all disappointment. In the case of many plants it is obvious that the bloom is developed and matured by the growth of the previous season. The Camellia and the Azalea, as you may have noticed, set their buds large and plump in the fall, and only await expansion in the warmth of spring, or earlier if they are forced. Now it is evident that in these plants the main part of the work is already accomplished, the strength is stored up, a genial atmosphere will expand the buds and do the rest. Now we may not as plainly discern in all plants this economy of nature in accumulating force for future use, but experience is certainly indicating that it is none the less true with roses and with all our most valuable plants. Nature makes careful preparation beforehand; she lays sure foundations before she entertains the thought of ornament. Surely the knowledge of this law is a great advantage to us who propose to obtain all the beauties of the seasons in mid-winter. For if we can store up a reserve force in the plants in the summer previous, with all the help of a genial sun, so that we have only to develop these accumulated stores, why then the winter work is largely done before it is begun. Yes, this is really so. We can produce rose plants of such vigor and with such ripened wood in the summer previous that little is left to be done except to give a gradual development. If you will do this, if you can so encourage your plants during the summer that the pots shall be well filled with strong roots in the fall, and the wood is hard and firm and the eyes are prominent and large, then you may say that nine-tenths of your work is done, and the rest is easily accomplished. No potting on or shifting is to be allowed; only cutting back the wood to a few prominent eyes and starting them slowly after a short rest. By giving heed to the proverb of the wise man, and following the example of the little ant, which having no guide, overseer or ruler, provideth her meat in the summer and gathereth her food in the harvest, we

also may lay up store of strength sufficient for all the exigencies of winter. Rightly managed there is no reason why the hardy roses may not be forced in our dwellings. They will not give the profusion of bloom throughout the season of the ever-blooming class, but they will give one abundant crop, and of such fragrance and richness of color, as will far outweigh any possible lack. So highly prized are these superb varieties that the blooms will always bring extravagant prices in the winter season, 75 cents each being the rate to the producer for the past six weeks for the best specimens. The blooms of General Jacqueminot have been worth $6 per dozen for the same time, while such varieties as Bon Siléne, Safrano and Niphetos have been rated at about $6 per 100. But, horrors! what am I doing! I began by warning you against the sin of selfishness, and invoking the sweet influences of plants to eradicate the evil. I pray you to forget what I have last said, and never allow yourself to estimate the beauty and the value of a rose according to the money the sweet thing will bring in the market. Is it not a sin and a shame that such "a thing of beauty, such a joy forever," should be an article of merchandise to be bought and sold at any price? Heaven forbid that we should ever become keen to discern the scent of money in our plants!

In answer to various questions, Mr. Strong recommended tobacco for plant insects in general, hot water for the red spider, kerosene oil for the mealy bug. In regard to the English Ivy, he would water freely when growing strongly, sparingly when feebly. The Calla should not be over-potted, and should be given plenty of water. One trouble in growing roses is that they are generally over-potted; and the use of such peat as Elm Park is said to afford he pronounced injurious to the plants until after it has been exposed two or three years.

FIFTH MEETING, FEBRUARY 26TH, P. M.

President SALISBURY in the chair.

SUBJECT : OUT-DOOR FLOWERING PLANTS.

By Mrs. THOMAS L. NELSON.

In talking this subject over we must remember that we are talking of the climate in which we live, and not wander away to other lands : our object being to find out, if we can, what flowers will bloom and give the greatest satisfaction in our changeable New England climate. Our summers are hot and trying, our winters are cold and warm alternately, and we are at our wits' ends how to grow anything and how to keep it after it is grown. The bane of our American people is haste. Almost everything we do is done in a hurry. Now nature will not be driven beyond a certain extent, but although we may not drive we may coax a great deal out of her. Patience, however, not haste, must be our motto. One trouble with us is, there is a certain class of plants that are raised in the greenhouse and in our own homes that are called bedding plants ; not a very large list all counted ; geraniums, heliotropes, verbenas, pinks, salvias, feverfews, and some others, which people run eagerly after, and think they must have. In fact, I heard a leading florist say, that for summer these were all it would pay for him to raise for the market. Look for instance at the sales by auction in the spring. The class I have mentioned with a few basket plants and pansies (especially if they are in the last stages of bloom), will sell for prices oftentimes beyond what they could be bought for at the greenhouse, and delivered when wanted, while a plant of twice its value goes for almost nothing, simply because it is not known. If people would inform themselves a little on the subject of flowers—how they grow, what soil they need, and what kind of fertilizer their particular soil needs—there would be a great change in out-door bloom ; because bedding plants can be bought for little, and bloom well, they care for nothing beyond. I would not discourage growing bedding plants, but want them to be used as filling-up material ; in fact, to cover up the places made vacant by the winter.

I often hear of the deep interest which the old residents of Worcester had in this Society, the funds they have given to carry

it on, and the contribntions they made to its exhibitions, and I wonder why the interest is not kept up by their children. Do they not feel that it is left with them to carry on the work that their fathers and mothers began ? Young ladies don't like to don the garden hat and gloves, and, trowel in hand, raise flowers to decorate their homes and themselves, because it is dirty work, and they are afraid they don't look as well as they would in fresh muslins, reading a novel, or doing some fancy work. And young gentlemen think it more elevating to go fishing or boating, or something of the kind. I say to both, don't be afraid of digging, there are treasures to be found in garden work, which will soon make you forget the dirt and only look for the results. Mothers ! remember it is better to take your little ones out with you, and, if too young to have a garden of their own, give them a pile of sand. Don't be afraid of soiling their clothes. Teach them to dig, and however young they are, you will soon find them watching you and trying to imitate. After a season of this, you will find their strength and muscle in a much more healthy condition than if they were left to their nurse girl to be trundled through the noisy, crowded streets.

I am glad that at last the "queen of flowers" is asserting her rights. The rose fever is in its first stages, and the pulse runs higher and higher each succeeding year. When it will reach its highest may not be in our day, but it is truly wonderful the progress that has been made in the last twenty years. Now let us devote a little time to our best loved, much abused flower, the Rose ; abused, because with the attention we pay to even the commonest annual, we may have the rose in its perfection. Too many people think because some kinds of plants will grow and bloom in poor soil, all will. No greater mistake was ever made. The rose is a gross feeder, and demands a rich, close soil, well drained and enriched at least once a year by old well decomposed dressing from the farmyard or stable, left on the surface if applied in the fall, and dug in in the spring; or if in the spring forked in, so the roots may derive immediate benefit. In growing the bybrid perpetual roses (I think remontant is a better name), rose growers differ on the point of budded roses, or grown on their own roots. One half the people don't know, or seem to care, which they have. One firm sends out budded roses, unless otherwise ordered, and another sends on their own roots, unless otherwise ordered. Now what is the result in the case of the budded rose unless care is taken in setting ? Sometimes the bud is well above ground, sometimes below. Everybody who would grow the hybrid perpetuals should know that they are a cross between some of our finest June roses and the ever-blooming class,—Bourbons,

Bengals, &c.,—and of course can not be as hardy as June roses. So if the bud is above ground, and not properly protected from the weather, the best part of the rose is liable to be killed, leaving nothing but wild stock. The best authorities say, take budded roses by all means. The roses are finer and the growth far beyond what we can get on roses on their own roots. It is advanced as an argument in favor of roses on their own roots, that the stock on which they are budded is so much more vigorous than the bud, that the suckers overgrow the bud. It is no hard matter to detect the sucker. If the bud is above ground surely you can detect the difference, and if below, if you have any doubts, dig a little below the surface, and set them at rest. As far as my experience goes I much prefer budded roses. Budded roses that I purchased of Elwanger & Barry in the autumn of 1878 bloomed in the following season three and four times during the summer and autumn, each time perfect in form and color, while I have growing in precisely the same soil and location roses on their own roots set out the previous year which have never shown bloom. I believe I set in 1877 ten on their own roots, and at least four out of that number, strong, vigorous plants, have never bloomed, while out of 17 budded roses set in 1878 all, with the exception of four, bloomed last season, and those that did not bloom had not got established and strong enough to bloom. Mad. Victor Verdier, Mdlle. Eugenie Verdier, Louis Van Houtte, Alfred Colomb and Marguerite de St. Amande were among the budded roses. So you can readily see why I prefer budded roses. I need not tell you how to keep off the enemies of the rose, as Mr. Hyde told you all about that a few weeks ago.

Now let us glance at the ever-blooming roses. I leave mine in the ground, year after year, and save almost all of them, certainly more than when I used to take them up in the fall and plant them out again in the spring. First grow them well during the summer. Give them plenty to live on. Then in the early autumn give them a dressing of well-rotted compost. Then late, after quite severe frosts, pin them down and put leaves over and around them, and cover with boards. Quite early in the spring take off some of the boards and give them a little air. After, remove both boards and leaves and dig in the compost. Some of them will die to the root, but a good vigorous root, ready to start, is worth two greenhouse plants. I have, however, wintered just as successfully by covering with sods instead of boards. In both cases be careful not to open them too suddenly after their long winter's rest. In a former paper I told you there was little difference between the hardiness of the hybrid perpetuals and the tender roses, and after two more years I repeat the assertion,

that as far as my experience goes that is the fact. Last winter a tea-rose, Bon Siléne, standing in a sheltered spot, was forgotten and remained uncovered during the winter, with only a slight protection of leaves about the root, and last summer it gave as fine blooms as I have ever seen. What I have said may be old to many of you, but I hope to get some information from those that are much farther advanced in the art of raising roses. I do not wonder that amateur rose-growers stand appalled at the elaborate directions given by writers on roses, notably the English. I do not think that we Americans, as a nation, love flowers as the English do. I am told (I have never been there) that the cottagers vie with each other in their small gardens, and produce flowers that practical gardeners might well be proud of. It cannot be that they have great resources, but one thing is certain, they do not say, as I have been told recently by a friend, "I have no time to grow flowers." It is easy to find time for whatever we want to do, especially when the heart is in the work. I drift almost without a thought from the rose to the lily. In my mind they are always associated, and, although I have little to say about the culture of the lily, I will speak of some of the different varieties. All of the lilies which we cultivate are not entirely hardy. Lilium longiflorum must be protected with a light compost. Auratum is very particular where it grows, and sometimes, under what seem to us favorable circumstances, disappears entirely. I wish we could be as sure of it as we are of the lancifoliums. Lilium Humboldtii and Lilium Parryii, two fine varieties from California, are coming into market, and promise to be acquisitions. Perhaps the new lily Parkmani, a cross between auratum and rubrum, will prove more hardy and reliable from the fact that rubrum is so robust in its growth. Benj. T. Wells, of Boston, is importing some very fine varieties from Japan. Amaryllis formosissima is fine for bedding purposes, and gives general satisfaction; also, Zephyranthes rosea, a beautiful pink lily-like flower. There is a white variety of the latter, but it is not common, and I do not know how it would be as a bedder. The Zephyranthes is also called the Atamasco Lily. The Gladiolus is one of the leading flowers now, and there is an almost endless list of them, and when we think of the time when there were only two or three varieties, how strange it seems. If given the soil it needs, it is rampant. I have found a rich, clayey loam produced exceedingly fine flowers, and the roots raised on that soil were the finest I have ever seen. One ought to make successive plantings; about three, two weeks apart, will give early and late blossoms.

The Tuberose is easily grown—at least I find it so; whereas I

used to think some years ago it was difficult. I start some in pots for early bloom, and plunge in the border when it is warm enough to trust them out of doors. Others I plant in the ground after it is thoroughly warmed, and they soon start. If in the fall there is danger of frosts, no plant is more easily lifted. I never saw that it made the slightest difference with the bloom. It is very important that we have strong northern-grown bulbs. The Clematis is of great value for summer bloom. I think it thrives in almost any soil and location, and is especially adapted to covering stumps, making screens, and covering unsightly places with masses of beautiful bloom. The foliage is almost evergreen, thus making it doubly valuable, and their growth is so vigorous they are getting more in favor each succeeding year. Another fact ought not to be forgotten, they bloom almost constantly during the season. It would be useless for me to speak of the deutzias, spireas, hydrangeas, and other hardy, flowering shrubs, as they are so sure to live when once established; they form, with pæonies, hardy phloxes, perennial delphiniums, and other hardy herbaceous plants, a class to be depended on year after year. Anemone Japonica, alba and rubra, are beautiful fall flowering plants, entirely hardy, and very strong growing. I must touch lightly on the aquilegia family, as I consider them of very great value. Aquilegia chrysantha, the beautiful yellow variety, cœrulea, blue and white, and a hybrid between the two, which our Secretary introduced into this city three years ago—blue and yellow—I believe he calls it Cerulea hybrida.

The varieties raised from the last named are numerous, as shown in some gardens in this city, and on Elm Park. I noticed an article in the *Gardener's Monthly* for December 1879, entitled "Hybrid Columbine." "The *Garden* gives a colored plate of an aquilegia, in which the sepals are bright blue, and the petals yellow, a hybrid between the American Aquilegia chrysantha and the A. cœrulea." Now this is the aquilegia that many of us have grown, but the worst feature about it is, it scarcely ever comes true from seed. There are a great many nice varieties older than these that are well worth cultivating. The only difficulty in growing them is the liability to damp off, and there is a worm that eats into the centre of the stalk and causes it to droop without any apparent cause. I am told the only way to destroy it is to cut the stalk open and destroy the intruder. I have found lime water would make the plant revive, by which I inferred that the worm was dead. One of my especial favorites is the Pansy. How beautiful the many varieties are, has been demonstrated time and again in this hall. So easily grown, and requiring so little care, I suppose if some of our florists were to show baskets of plants in

full flower, side by side with plants ready to bloom, the blooming plants would all be sold before a customer was foundfor the nice little plants, worth three times as much, which would give some summer bloom and an abundance of blossoms all through the autumn. The mania for over-grown plants in full flower extends even to this modest flower. I should buy of reliable parties, small plants, and not have the dissatisfaction of seeing them droop and die in warm weather, as the large plants almost always will. Then comes the glory of the late summer, the Asters. Unlike many of the annuals, light frosts do not affect them, and they give us varied and beautiful bloom after summer flowers are gone. And, latest of all, comes the Chrysanthemum, the pride of the autumn. All of us have grown them, more or less, still we do not grow them and grow the new varieties as we ought. And now the winter has come, and we must leave our summer flowers to take their rest.

I sometimes wish our climate were always summer, and then the question comes up should we prize our out-door flowers as we do now if it were always summer? I should like one thing, however, and that is a little more length at both ends of our summer. As it is, everything takes us by surprise. The spring is late, and warm weather finds us unprepared for it, simply because we have waited so long. Then, while in the midst of summer weather, a killing frost, like the one we had last September, comes, and we awake to find our choicest flowers drooping and dying. There is no other way if we stick to our rugged rocks and bleak winter winds, but to be watchful and beware, knowing well that when we least think it, the enemy of our friends the flowers, cometh.

SIXTH MEETING, MARCH 4TH, P. M.

Vice-President HADWEN in the chair.

SUBJECT : ORCHARD AND VINEYARD FRUITS.

The subject was introduced by Dr. JABEZ FISHER, of Fitchburg, who remarked that the theme was too extensive for one afternoon, and he felt obliged to confine himself to some one of its branches. He suggested that as his name was synonymous with Grapes, if the audience desired, he would talk of the cultivation of that fruit.

In choosing a location for a vineyard, he would select one as far north as possible where he could succeed, as insuring the best results, but would not go further than his present location. You must choose a gentle southern slope, tending a little to the east, to get the advantage of a tropical sun, which the grape loves, the hotter the better in this region. The soil should be lighter the further north you go, but you cannot get the best results from a light soil. Any ordinary preparation is good enough, cultivation a year or two previous not being required, and highly cultivated land being avoided, as it gives too much wood growth, while a proper balance of all the powers of the vine is necessary. If the ground is in sward, plough ; not deeply, however, as deep ploughing tempts the roots to run out of the influence of the sun. Plough just enough to kill out the sward. The best vines are those not over a year old. Properly treated two-year-old vines are a little better than those one year old, but not enough better to pay for the trouble, and those just ready to bear are worth little more than brush, and not worth saving, unless to preserve a variety. Planting is a simple matter, and 600 vines can be set with one helper in an afternoon. Shorten in the vines to six or eight inches of root in a system like a cart-wheel, scoop out the soil four or five inches deep, set the plant in, and tread on the soil to compact it, taking care to have the soil friable in the beginning, to bring the mellow soil against the roots. The first year the vineyard can be used for growing anything else. Set the plants six feet apart, in rows eight feet apart, although this may be altered to suit the soil, the rule being the one he follows. Have the trellises run north and

south, to get the sun's rays on both sides of the trellis and on the soil near the roots, so that it will be warmed up and kept warm through the night, and because it is less liable to wash. The plants can be let alone the first year, as training to a single stem produces a single root, while allowing it to spread produces spreading surface roots, which are preferable. In the fall prune off everything that is grown, leaving only two or three buds to start from. The second season train to a single stem, and at the close cut off all that has grown as before. The third year build a light trellis, coating the posts, which have been well seasoned, with gas tar boiled with dry slaked lime to preserve them from decay. Well seasoned posts thus treated will last 15 to 20 years, but a green post thus treated will decay sooner than if not coated. He would use No. 15 galvanized wire, with four strands to a trellis. The third year train with a single stem to the first wire, then horizontally six feet, pinch off and allow to grow at random, pinching the laterals to one leaf. The next vine carry to the third wire, and then train along as before, treating the vines in this manner alternately, as it makes cultivation much easier. At the close of the third season your vines have a strong cane, and six feet of horizontal wood. They are not allowed to bear, as they are not able to do it, and cannot recover in less than three seasons, if they ever do, if overloaded then. Then cut the horizontal cane back one-half, leaving only three feet for the next year, when about ten upright shoots will start to grow, and out of them you should select say the best six. Rub off the smaller ones, and from each shoot you will get from one to four clusters. If four, cut off the two upper ones at once, leaving only two to a shoot. Wait till they blossom and set their fruit. Then cut off one of them and the six clusters will bring you as good a return as a greater number, and more than twenty-four will. The fifth year about the same programme, but if the vines have done well you may leave all the horizontal wood and get twelve clusters. If the clusters threaten to weigh twelve pounds some of them should be taken off, as a vine can carry but six or eight pounds in a season and repeat it. The care during the fourth and fifth years, and afterwards is to pinch out the shoots after tying them to the wires, and all the clusters but one ; continue pinching out all the laterals, leaving one leaf each time, as good fruit and much wood can not be made at the same time, and the little new leaves must not be allowed to cover up the older larger leaves which are the lungs of the vine. He has had leaves from fourteen to seventeen inches in diameter, and those twelve inches are common. With such foliage there is no difficulty in growing grapes. While doing this, preparation has to be made for the next year's crop, as

it is determined the season previous how many clusters there will be and how many berries on a cluster, and how many buds will open. It takes two years to make a grape crop, and nothing can be done between now and next July to alter the one now in embryo, therefore in the spring preparation must be made for the next season. Overloaded vines will not mature either wood or fruit, and the crop is not worth half as much, and the next year's crop will be only half a one. On light soil he would use barnyard manure, but on strong soil he would not, as it would destroy the balance of the vines. He uses chemical fertilizers, as his soil is heavy, but just what a soil needs can be determined only by experiment, and he is engaged in making experiments which will have to be repeated time after time. Being asked the remedy for a vine which has grown luxuriantly for twenty years without fruiting, he said dig it up. Dooryard vines, as a rule, are too highly manured. There is a good deal of work about growing grapes as well as everything else, and the vines must be looked after closely or you will not succeed, as they must be attended to at just the right time. The shoots should not be tied till after they have become a little woody and reached the wire, and all should be tied up at once, usually about the 10th to the 20th of June. Never had seen the thrips out-of-doors. The only grape to cultivate for market he believes to be the Concord, as ensuring a crop nine years in ten, while with others a crop cannot be got more than seven years in ten, and some not more than two or three. With him the Delaware sometimes mildews, and then the grapes don't ripen. The Rogers either give a valuable or a worthless crop, and are inclined to mildew, and you must have a vine healthy two years in succession to get a crop, and this is the trouble with many varieties. The Worden he had grown till it produced two excellent crops of Concords, and the Brighton he had found to mildew badly ; the Concord is thin-skinned and will not keep long. To keep at all they must be put into a cool, dry, uniform atmosphere, and the same is true of any fruit. He never handles the fruit, laying it as soon as picked on boards and carrying to his cellar, where they remain till ready for the market. Grapevines bleeding to death is an old woman's whim, and he prunes at any time though preferring the autumn. After the buds swell he would prefer to rub them off instead of pruning, but would not hesitate to prune if he wanted to.

SEVENTH MEETING, MARCH 11TH, P. M.

Vice-President HADWEN in the chair.

SUBJECT: DOES HORTICULTURE PAY, AND HOW?

The subject was introduced by Mr. WILLIAM H. EARLE, who commenced with a tribute to nature, and treated the class engaged in the cultivation of the soil as that in whose success the interests of mankind are so much involved that every question concerning the production of food, fruit, flowers and plants, deserves serious attention. In speaking of Horticulture he said that whether pursued as a recreation, or as an avocation, it has a peculiar interest in training us to habits of quick observation, in ennobling and elevating the heart and life; for the more we comprehend design and purpose in the works of nature, the more we shall learn to understand the fitness of means to end, in human conduct. Speaking of the manner in which the work is generally done, he said:—

But few seek to comprehend those laws, in accordance with which individual effort is alone able to secure the best results. It is the right understanding and application of the laws and conditions which govern and control the application of human industry to the original materials that the Creator has spread around us, which largely determines the profitableness of our labor, which gives us abundance, health and contentment, or brings to us unrest, privation and want. The life of the farmer should invite to something more than ploughing and sowing, and sweating in the harvest, and gathering into barns. This body is not our real life, but only the covering of the man. More than the body the mind needs food and growth, and we should care for the body for the sake of the mind and soul, the real man. Now the surroundings of our earthly homes affect beyond all recognition the higher development. Whenever I pass a farm-house with the garden all gone to weeds, fences down, and everything all "out of fix" every way, in these outer surroundings I see a copy of the inner life of the owner; even where the surroundings show thrift, if the well-kept buildings have about them neither tree, hedge, nor plot of flowers or grass, I cannot reconcile such a life with any sound philosophy. From such

homes let us not be surprised to find that the young men and maidens will continue to go away. The sons of such farmers are rushing to the cities, glad to get away from the work-work-work and drudgery of the farm.

The farmers around such a city as this are the proper class to take the lead in the knowledge and practice of Horticulture; in the making of homes beautiful and valuable; something to love and be proud of; and it is gratifying to see that many are doing this. Every farmer should, in connection with the other uses and productions of his lands, devote a liberal portion of his time to orchards, gardens, small fruits, plants and flowers. And farmers who will spend a portion of their time in this way will never have cause to regret it. They will find their example followed by scores of others, thereby raising the standard of refinement in their own neighborhood, while in a pecuniary view the investment will pay three-fold in increased health, wealth and pleasure. Their children, too, will many more of them cheerfully remain at home to join in such, no longer irksome, labor; while their shiftless or stingy neighbors' children will be likely to show themselves at the old homestead only at the annual Thanksgiving, or, perhaps, from a sense of duty as well as relief, "to attend the old man's funeral."

Every farm should have an orchard, garden, vineyard and small-fruit plantation, for luxuries and health as well as profit. There is naturally implanted in every human breast, when not extinguished by the cold, selfish reasoning of the world, an admiration and love for the good and beautiful, which, properly improved and cultivated, seeks and finds exquisite pleasure in all that is exalting in the works of Creative Power. An example of this we have in the life and character of the late John Milton Earle, who for so many years devoted so much of his time and thought to the interests of this Society. How much we are indebted to him for the benefits we have derived from his accomplished mind, his unwearied industry and elevated character. His services will be long and gratefully remembered. May the reflection of his genial face from yonder painting long continue to shine upon us as an inspiration and a benediction.

The adornment of our homes has a moral influence. The love of the beautiful never becomes extinct in the human soul. It may be crushed by selfishness and avarice, blurred and stained by sin and crime; but deep in every heart the latent spark remains, and needs but some purifying influence to bring it into healthy action. Even the convicts in our prisons, it is said, rejoice to get at the sight of flowers—sweet flowers;

"They blossom in every nook and place,
In this beautiful world of ours;
And like the sight of an old friend's face
Is the smile of bright, bright flowers."

In horticultural pursuits practice should be guided by science. We should learn the name of different kinds of plants and flowers so that as we read books we may understand how they explain how plants grow, live, and form seeds. By understanding a few plain, scientific terms, we shall be induced to open our eyes and ears, and wherever we go, find

"Tongues in trees, books in the running brooks,
Sermons in stones, and good in everything."

Have we any right to go through the world looking upon everything as so much to eat, to drink, and to use? Should we not ask ourselves why things happen, and how God governs this world of ours? Why does the wind blow, and why does the little flower open in the sunshine and close in the storm?

Mr. Earle here gave a comprehensive sketch of the development of plant life, and briefly described the relations existing between it and insect life, concluding that they were guided by the law of mutual help, the law which bids you and me be kind and good to all those around us if we would lead useful and happy lives. If, said he, you are ambitious only to ascertain how you can get so many dollars for so much labor, your investigations will end when you have found out a few facts about the conditions most favorable to plant growth; but if you desire to learn more and more of nature and enjoy discovering its secrets, you will soon get at the spirit which lies under the facts, and love knowledge for its own sake.

To enjoy Horticulture and make it pay, he considers it necessary to love nature. If we wish to enjoy otherwise dry facts we must clothe them with real meaning, and love the truths they tell. In this driving age of ours, when restlessness and love of excitement pervade so many lives, is it nothing to be taken out of ourselves and made to look at the wonders of nature going on around us? Try it, my friend, the next time you are melancholy, or have the "blues"; just go out in your garden alone and interview some little plant or flower, and ask what story it has to tell; see how their scents and colors attract the insects; learn how insects cannot live without plants, nor plants without the butterfly or busy bee; and thus when we see the quiet, steady working of these fixed laws, we shall, in a measure, lose our impatience, and recognize a law and purpose in everything in the universe,

and realize that the same power that adapted the flower to the insect, and the insect to the flower, is also moulding your life, and by varied labor and discipline fitting you for a higher destiny. No one who loves nature and studies it can ever long feel alone or unloved in the world.

Let us then cultivate these God-given fruits and flowers, not alone for the dollars we may get from them, but for nobler objects also. Every tendency in their whole cultivation is to ennoble, to elevate, to refine. They add new joys to our homes, and new pleasures to our friends. They give health and vigor to our bodies, both in their cultivation and consumption. Let us grow them in abundance, and spread them upon our tables with a generous hand. Unlike much of the food we eat, there is no deception in their manufacture, no adulteration in their substance, no lurking poison in their delicious flavor. In their presence our homes shall echo with the laughter of happy children, made glad by the lessons of truth, purity and happiness that fruits and flowers shall teach; and through our love of nature shall come love in its manifold forms,—love of our work, love of truth, love of integrity, love of man, and love to God.

EIGHTH MEETING, MARCH 18TH, P. M.

Ex-President WM. T. MERRIFIELD in the chair.

SUBJECT: TREES AND SHRUBS FOR ORNAMENTAL PURPOSES.

By OBADIAH B. HADWEN.

Thirty-seven years ago I purchased some land, the major portion of which had, for many years, been used for pasture.

I found thereon trees growing from nature's planting; there was the Elm, the Oak, the Hickory, the Ash, Chestnut, Birch, Bass, Pines and Spruce, with trees and bushes of smaller growth indigenous to the soil and climate.

Among them were some trees that had undoubtedly been growing for nearly, if not quite, a century, and even now remain unscathed. They have attained diameter of trunk and upright spreading tops, casting shadows for long distances; and are accustomed landmarks. During the intervening time I planted seven sorts of Oak, eight of Maple, five of Elm, three of Chestnut, four of Walnut, four of Ash, three of Linden, three of Horse Chestnut, three of Beech, three of Larch, five of Pine, eight of Spruce, six of Arbor-Vitæ, four of Magnolia, four of Birch, and one or more of many other sorts.

Upon my open farm lot, unadorned by tree or shrub, save a few hardhacks which, nestling close to the fence, had escaped the annual clipping of the scythe, I built a small farmhouse and planted about it trees and shrubs, some indigenous, others having their origin in foreign lands. I have passed many pleasant hours in watching their annual growth, each differing from the other in form, habit, leaf and bloom; some of them are already grown to be shapely and stately trees. They shelter the habitation from fierce winds, also afford a sheltering belt to the northward and westward fields; adding rural aptitude to the surroundings, and charms to the farm landscape, strewing the roads and walks with shade, which will endure for generations after the hand that planted them has ceased to labor. May the habit of finding enjoyment in trees and flowers thrill others with enthusiasm, and encourage the thought to cultivate them!

Among these belts and groups of trees squirrels breed, living in hollow boughs, gathering their sustenance from the nut and seed-

bearing trees. And in their sports, as daily seen from the windows, measuring long distances with their daring leaps from tree to tree, are even utterly unconcerned at our presence, and impudently chirp at the cat as she sits watching and wishing. The partridges bud from the apple trees and often whir away from our very footsteps. Birds in great variety nest and rear their young, adding life to the picture and filling the air with their song from early dawn until sunset. From the uppermost twig is often perched the robin *(Turdus Migratorius)*, whose name is classic in the reports of the Secretary of the Society. The *turdus*, unchecked and undaunted, verifies by daily habits the charges preferred against him, and undoubtedly will long survive the annual clean cut of the accomplished pen and "lamb-like character of the Secretary."

With the progress of civilization, of wise thrift and good taste in embellishing grounds, both public and private, trees termed ornamental can be made to form a conspicuous feature, which must be ever prominent, where their selection and planting has been carefully studied, and made by graceful effect to fit the situation.

The variety of Ornamental Trees and Shrubs that thrive hereabout, is so large that we can but briefly touch even the most desirable, in a paper for a half-hour. It is found that many trees and plants that were considered but half hardy, thirty years ago, are becoming acclimated and are now able to withstand the most severe temperature. But I will confine this paper to such as have been found to thrive upon my own grounds, in this latitude; fully comprehending, that, as time goes on, valuable acquisitions will be made to the present number. But let us not wait for time, rather availing ourselves of the wonderful variety nature has given us, as her best work, for beautifying lands of all descriptions or localities.

In speaking of Ornamental Trees, the question occurs, what well grown, and furnished, tree is not ornamental? The trees usually termed ornamental are the non-fruit-bearing trees.

Prominent among these are the Maples *(Acer)*, in their variety especially conspicuous all over New England, as well as prominent in Central Massachusetts.

The kinds found to thrive hereabout are the Sugar, Norway, Red, White, Silver, the several cut-leaved sorts; and the recent acquisitions from Japan are very ornamental. In fact, the whole family is one of great beauty; and, as deciduous trees, are in the front of the ornamental class, and some of them are found to thrive in almost all soils and situations.

The Elm *(Ulmus)*, is for some situations highly esteemed

as a shade tree. The whole family are long lived; but the American Elm may justly be termed the king of the family. The Slippery, English and Scotch, all of them thrive here and make fine trees for streets; I mean those streets of sufficient width for their development; also for large grounds where room enough can be had for the full development of its graceful form and sturdy trunk.

The Oak *(Quercus)*, abundant in the pastures and forests, sometimes, but too rarely, adorns private and ornamental grounds. There are, however, a few exceptions where the Oak is prominent, holding sovereign sway; and few trees are more stately or produce better ornamental effect. The indigenous sorts are White, Yellow, Swamp, Red, Chestnut, &c.; all very ornamental.

The English Oak, of several sorts, is found to thrive here, with good care, even better than the natives. As an ornamental tree, it must be ever prominent as a distinctive feature in the landscape, either on elevated or undulating grounds. Where single specimens are given time for maturity no other tree is to be compared with it, in its great variety of beauty, changing with the seasons from the delicate bronze of the opening leaf, to the deep and glossy green of summer, and the gorgeous colored tints of the autumn. The foliage remaining on during the winter adds picturesqueness to the variety of beauty of the winter scene. The seeds of the Oak, well known as acorns, are in some varieties very ornamental, and germinate and grow readily when planted.

The Ash *(Fraxinus)*, is indigenous hereabout; but the White is most prominent. It produces a fine effect in streets; and on extensive grounds, in groups, when viewed from distant points, it has an upright gracefulness, and produces fine effects, in contrast with other trees. The leaf comes out late in the spring but turns in early autumn to a soft purple tint, remaining for some weeks in fine contrast with the green of other leaves. The White Ash is especially valuable for its wood, and transplants readily.

The Walnut *(Juglans)*. There are several sorts prominent as ornamental trees. The Hickory, the Black Walnut, English Walnut, and Butternut. The Hickory, although difficult to transplant, unless often moved when young, when well grown makes an elegant and stately tree. The Shellbark, in its luxuriant leaves and shaggy bark, has a distinct type and holds a place in fine harmony with other trees. Its fruit is abundant, very sweet and of delicate flavor; it is ever the favorite tree of the boys,* when the fruit is ripe.

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* Girls also (?) E. W. L.

The Black Walnut, a fine vigorous tree, with spreading habit, the lower branches reaching out in a horizontal position, the leaves some 12 or 14 inches long with six or eight pairs of leaflets on each side, and swaying gracefully in the breeze. This is also a fruit-bearing tree, with large round nuts, not as delicate in flavor as the shellbark. The Black Walnut ought to be more extensively planted, as its many desirable features recommend it for an ornamental tree, when it can have ample space.

The Birch *(Betula)*, is a tree of rare and graceful beauty. The most prominent are the English, Weeping, the Canoe, White, Black and Yellow. Some of the birches being so common, lining the very road-sides, and occupying almost all waste spots, the variety has not been as extensively planted for ornament as it deserves. Perhaps the first place should be accorded to the European ; with its shapely form, and the graceful sweep of its pendulous branches, with its beautifully cut and varnished leaf and with its snow white bark, it must rank Queen of the Birches.

The Canoe Birch about here is in its southern limit, and does not attain the same diameter of trunk that it does in more northern regions. I have watched the growth of one specimen for nearly forty years, until it is now almost two feet in diameter ; its clear white papery bark giving a marked effect to the trunk, well furnished with branch and leaf. Where it flourishes it is truly a picturesque tree, of spreading graceful form, and its cultivation should be encouraged.

The Black Birch, or Sweet Birch, is the very first of the family that the boy learns to recognize, as he bites the fragrant bark. The tree has many fine features and is beautiful in its golden racemes, and airy leaf ; it is deservedly finding its way from the wild to cultivated grounds, and thrives therein.

There has been recently introduced, I believe from England, the Purple Birch. Both bark and leaf are intensely purple, promising to cope with the Purple Beech. With purple tint and glossy leaf it is conspicuous. I am unable yet to describe its habit, my own being quite young but of thrifty growth.

The Beech *(Fagus)*. Among the larger trees that may be recommended for ornamental planting, the Beech, in its variety, is worthy of more elaborate consideration than this paper will permit.

If I ever envied a tree, the property of another, it was the Purple Beech ; and I am not prepared, either for the lawn or for a conspicuous position in any grounds, to assign the Purple Beech a second place. It is said to have had its origin in Germany. When properly grown it has so many desirable characteristics that no grounds of any pretensions should be without it. I know

of a tree where the lower branches extend fifty feet. In early spring, when the leaves are intensely purple, and when agitated by wind, on strong sunlight, its brilliancy is unequalled by any of the tree family, and would vie successfully with any of the gorgeous tints of other trees in autumn.

The Fern-Leaved Beech is a tree conspicuous for the clean cut and airy lightness of its foliage; a very pleasing tree to the cultivated eye, and sure to be marked in any collection as one of nature's best works in the beeches. Its growth is slow unless planted in good soil, when it makes a vigorous growth.

The American Beech, found more or less over our northern regions, is much admired for its singularly neat and airy foliage, which often adheres to the branches during the winter. When in groups they are delightful in their many excellent features; always in full foliage, as but few insects injure them.

The Lindens *(Tilia)*, once so popular, are now much less planted. The American, commonly called Bass, makes a stately tree, with large leaf; and in July their flowers fill the air with delicate perfume.

The Magnolia: A few of them thrive here and are among our most beautiful trees. The Magnolia *Acuminata* grows perfectly well, is profusely clothed with large green leaves, and in June flowers; the fruit resembling a small cucumber.

The Magnolia *Tripetala*, after the first few seasons of growth, is found hardy, its beauty being in its very large tropical leaves, with large white flowers six or eight inches across.

Magnolia *Soulangeana* and *Conspicua*: But few, if any, trees are more ornamental than these, when in bloom; being filled with white and pink flowers, four or five inches across before the leaves unfold; they are particularly well adapted to small grounds.

The Tulip Tree *(Liriodendron tulipifera)*. The Tulip is a great favorite on extensive grounds, and being of rapid growth soon becomes a tall stately tree, with leaves of peculiar cut and freshness. The flowers open late in June, are fine, tulip shape, of greenish yellow tint. I have seen trees near Philadelphia with trunks nearly four feet in diameter. They are, by the way, a difficult tree to transplant. Then I admire the Gingko or Salisburia with all its foreign caste, its Oriental primness and precise regularity of growth and habit, with peculiar shell-like leaves of pea green. Seemingly bearing the stamp of its native country, patient and polite.

The Larch *(Larix)*, is considerably planted as an ornamental tree, its straight stem, pyramidal shape, rapid growth, and when old its value for timber, render it desirable. It is also a good

tree for shelter, its abundant branches and fine twigs breaking the force of winds.

The Larix *Leptolepis*, or Japan Larch, is quite likely to prove a valuable acquisition. Though not as rapid in growth as the European, it is better furnished and more symmetrical; the foliage is longer, and very golden in autumn. It is quite likely to prove the Queen of the Larches.

There are other deciduous trees worthy of planting, which I can only attempt to designate by name. Among these are the Oak-Leaved Mountain Ash, Catalpa, Cut-Leaved Alder, Horse Chestnut, Kentucky Coffee Tree, Kilmarnock Weeping Willow, Weeping Beech, Weeping Ash, Wier's Cut-Leaved Maple and the Purple and Gold Leaved Maples.

Nor will I attempt to elaborate upon that beautiful and indispensable class of trees known as Evergreen, viz: The Pines, Spruces, Cedars, Cypress,—leaving them for consideration in some future paper.

It is with diffidence that I now approach the subject of Flowering Shrubs, after the elaborate essay a few weeks since. Among the older ones is the *Althea*, proving a hardy, free-blooming shrub in autumn. When planted in groups it produces a fine effect. There are several sorts, giving variety of color, for late summer and autumn bloom.

Asia.—The Flowering Almond, the rose and white are among the earliest to flower, and in great profusion; closely allied is the comparatively new *Prunus Triloba*, much stronger in growth and of great excellence; the flowers are pink, opening before the leaf; it proves hardy and is a very ornamental shrub.

Europe and Persia.—The Lilac is a large growing shrub, that rarely if ever dies,—at least I have never known one to die. When in flower it has no peer for beauty and fragrance.

China and Japan.—The Deutzias are an exceedingly favorite family; no shrubs are more profuse in bloom, and none more hardy.

I mention the Deutzia Gracilis, Crenata, double flowering white, and white tinted with pink; the Scabra and Fortunii are strong growing, with large cupped white flowers in great profusion; they are readily grown from seed.

The Colutea, indigenous on Mt. Vesuvius, is a fine shrub, with delicate foliage, and yellow flowers; the seeds are inclosed in a bladder, and in themselves are curious and ornamental. The leaves are pea green and remain unchanged until late autumn.

Europe.—The Daphne Mezereon is a small shrub flowering early; the Cneorum is evergreen, flowers in clusters and is very fragrant.

The Forsythia is one of Fortune's introductions from China. It withstands most winters, and in early spring has yellow bell-shaped flowers in great abundance.

The Japan Quince, *Cydonia Japonica*, is an old and well established shrub, full of bloom in early spring. There are several with different colored flowers.

South.—The Silver Bell *(Halesia)*. A very handsome shrub, blooming in May, having white bell-shaped flowers.

Natives of South Atlantic and Pacific States.—Japan.—Syringa *(Philadelphus)*. There are several sorts, prolonging the season of their bloom of white flowers; they are mostly fragrant.

Spiræa, are among the larger families of shrubs, some are very beautiful. They are in bloom from spring to autumn, giving very great variety of leaf and form, and color of their flowers. I find a few of them tender, but most sorts perfectly hardy. Perhaps no greater variety of bloom can be found in any one family.

China and Japan.—*Diervilla*. The Weigela, another of Fortune's China flowering shrubs; there are several sorts, and all are very beautiful. It is regarded as a great acquisition and approves itself well over a large extent of territory.

Hydrangea Paniculata Grandiflora;—from Japan, where it is said to attain a height of 12 feet, and perhaps is second to no other flowering shrub in its season. It is being widely disseminated and giving universal satisfaction. The flowers are sometimes more than 12 inches in length, remaining in bloom a long time, changing from white to pink and bronze; grows well in the shade.

Ghent Azaleas are found hardy and their great variety embraces flowers of every shade of color. Their effect, when planted in groups, is very fine. They are easily cultivated and deserve more attention. A soil of sand and peat, with leaf mould, suits them.

Azalea *Mollis* is of more recent introduction from Japan, their trusses of flowers are often as large as those of the Rhododendron, are mostly self-colored, with the softest delicate tints. This is regarded by many who are competent to judge, as the best hardy flowering shrub cultivated.

The Rhododendron, an evergreen shrub, indigenous to this country, which of late is receiving considerable attention. There have been at the rooms of the Massachusetts Horticultural Society forty-eight varieties exhibited by one grower; in their variety, perhaps no flowering shrub is more showy in their season of bloom; when under favorable circumstances it attains a height of 10 or 12 feet. But it is a plant that, to thrive, requires very

favorable conditions; and they are often productive of failure and disappointment.

There are many climbing flowering plants which are desirable to cultivate, making a good fit in many places; among them are Clematis, in great variety, Akebia from Japan and proving hardy, Wisteria, Trumpet Flower, Honeysuckle, &c.; and I could name many more, but forbear.

With the advance of the genial season those who love and cultivate trees and flowers will be ever alive and rejoice in the swelling bud and bursting bloom, proclaiming the season of flowers is at hand. Even the habit of finding enjoyment in these beautiful plants is worth much; its scope is further than the eye can reach, or the reason appreciate and understand.

They are worthy of assiduous and devoted care, and will largely contribute to the enjoyment and happiness of those who cultivate them.

Mr. James Draper said the essayist had been so careful as to leave no ground for opposition or discussion. He said wide ground, much study and deep enthusiasm are needed to follow in his footsteps. The common grower wants to know what he can plant on his little ground. In Maples the Rock stands first; the Beeches deserve more attention; the American white is good everywhere, and the purple variety deserves all the praise it has received. In planting he advised the setting of small rather than large trees. He also asked more attention to the White Ash, a row at the Rice estate on Grafton street being cited as a sample of beauty. He commended the compliments to the Tulip tree, and said that here, too, small trees succeed best; the suggestion for planting it on a board is a good one. The Althea, if grown in very rich soil, is hardly a hardy shrub. The Forsythia is not hardy in all its varieties, but some will do well. The Catalpa has not done well here. He would give a caution against the Irish Juniper; it is pretty and attracts every one, but it will winter-kill one season in three. But there are enough evergreens which are hardy. Of climbing vines, he spoke of the Ampelopsis Veitchii, a closely clinging vine which adheres to a common brick wall, as perfectly hardy. The Magnolias, he said, have the same habit of root with the Tulip tree, and need careful handling when out of the ground.

Mr. Hadwen said of the Althea that it is usually hardy after planting out on high grounds; it should be cut back when planted out; after it is once established it is as stable as the lilac; many shrubs once called tender are now hardy. The Scotch Laburnum

is an instance of this. The Colutea is another; it may perish at the extreme tip of the twigs, but its flower and seed-vessel alike make it desirable. The Catalpa, of a hardy variety, is not known here, but there is a tender kind which fails here; the Speciosa is the one to plant. The Ampelopsis Veitchii is a new Japan ivy, which is winning friends everywhere; its rootlet is like a fly's foot, and will stick anywhere; it will cling to anything. A good specimen may be seen on the house formerly occupied by Hon. C. B. Pratt, corner of Main and Valley streets.

Mr. W. W. Cook said his observation is that the Althea is disappointing only on rich soil; on dry, rather poor soil, it will stand, not growing so fast but that the wood can ripen. The Wisteria and the Trumpet-flower also demand a dry spot.

Dr. Flagg spoke of the Virgilia as another very desirable tree. He expressed surprise that the Althea is a tender shrub; he had known it all his life as a sure grower. He advocated the developing of native trees and shrubs, rather than the eager introduction of new sorts. He also favored the English elm rather than the American.

The Chairman said the Althea grows on his grounds with entire success. He thought for a street tree the Elm can not succeed here; it splits down easily, and there are but few really good trees of this variety to be seen. He could remember when Front street was planted with Elms, but they are now not very handsome. The Rock Maple, the Beech and the White Ash are more desirable, from their better habit of growth. These three are enough.

Mr. George S. Coe, of Grafton, asked about the Weeping Elm, a variety with a firmer habit of growth than those on Front street. Mr. Hadwen said there are several excellent varieties which have not been named. The Elm will develop if space is given, but city streets are generally too crowded for their success. The Lancaster Elms seem to be different from those in Worcester.

Mr. Cook said another objection to the Elm is that it spreads its roots so far as to prevent any other vegetation.

Mr. F. M. Marble asked for the favorable conditions for the Rhododendron. Mr. Cook said he had grown Rhododendrons fifteen years; they were protected in the winter with pine boughs. The soil is inclined to clay; peat and sand was mixed in, and the shrubs always grew well and bloomed freely. He thought they need protection here in the winter. If sheltered from the sun by evergreen trees and shrubbery, no other shelter is needed. It will not do to wrap them up in straw; they only need shading from the sun.

Dr. Wakefield of Leicester was introduced and spoke of his

interest in the discussion. He approved the objection against the Elm on account of its spreading roots; it will go a dozen rods to find a rich spot, and will steal whatever it can reach. An Elm, properly placed, is a thing of beauty, and will withstand storm and ice; it is only in cramped positions that it fails from these causes.

REPORT OF THE LIBRARIAN.

To the Members of the Worcester County Horticultural Society:

In accordance with the custom of the Society, the Librarian herewith submits his annual report; and in so doing, he feels assured that the members of the Society will find satisfaction in the fact that the Library continues to be used more extensively from year to year; the number of books issued during the year just closed numbering 440, which is an increase of 35 per cent. over the year 1879 and 150 per cent. over the year 1878.

Increased facilities for consulting the Library have also been furnished by the introduction of a Library Table which meets a want long felt; and judging from the favorable comments that have been made in regard to it and from the numbers who have already patronized it, the Librarian feels warranted in predicting a much larger use of the Library in the future.

Besides the usual additions by purchase of books, your Library has been further increased by the very munificent gift of 64 volumes of valuable works upon Horticulture and Agriculture, from the heirs of the late Hon. D. Waldo Lincoln, a list of which is here given:

The Working Farmer; vols. 1 to 6; 1850 to 1856; by James J. Mapes.

Downing's Horticulturist; vols. 1 to 7; 1846 to 1852; by A. J. Downing.

Gardener's Monthly; vols. 2 and 3; 1860 and 1861; by Thomas Meehan.

Transactions Massachusetts Horticultural Society; vol. 1.

The Fruits of America; vol. 1; by C. M. Hovey.

The Horticulturist; vols. 8 to 11; by P. Barry.

Hovey's Magazine of Horticulture; vols. 1 to 5; Third Series; 1855 to 1859.

Hovey's Magazine of Horticulture; vols. 1 to 3; Fourth Series; 1860 to 1862.

The Annals of Horticulture; 1846 to 1850.

The Flower Garden; 1856; by Joseph Breck.

Studies in the Field and Forest; 1857; by Wilson Flagg.

The Pomological Manual; 1832; by Wm. R. Prince.

The Fruits of America; 1859; by A. J. Downing; revised by Chas. Downing.

Chemical Field Lectures; 1853; by Dr. A. J. Stockhardt.

A Practical Treatise on the Culture and Treatment of the Grape Vine; 1848; by J. Fisk Allen.

A Practical Treatise on the Construction, Heating and Ventilation of Hot Houses; 1851; by R. B. Leuchars.

The Farmer's Dictionary; 1846; by Dr. D. P. Gardner.

The American Farmer's Instructor; by F. S. Wiggins.

Pomarium Britannicum; an Historical and Botanical Account of Fruits known in Great Britain; 1827; by Henry Phillips, F. H. S.; third edition.

Our Neighborhood, or Letters on Horticulture and Natural Phenomena; by E. Bliss; 1831.

An Introduction to Systematic and Physiological Botany; by Thomas Nuttall; 1827.

Familiar Lectures on Botany; Almira H. Lincoln; 1831.

Thirteenth Annual Report of the Secretary of the Board of Agriculture of Massachusetts.

Fruits of America; vol. 2; 1856; by C. M. Hovey.

Gardener's Monthly; 3 vols.; 1862 to 1864; by Thomas Meehan.

The Magazine of Horticulture; 8 vols.; 1844, 1845 and 1863 to 1868; by C. M. Hovey.

The Horticulturist; 8 vols.; 1857 to 1864; by Smith & Mead.

The books added to the Library during the year by purchase are as follows:

The Window Flower Garden; by Julius L. Heinrich.

Dictionnaire De Pomologie; by André Leroy.

Revue Horticole; 1877 and 1878.

Annual Report of the Comptroller of the Currency; 1879.

Department of Agriculture; Reports for the years 1867, 1868, 1872, 1873, 1875, 1876, 1877, 1878.

Ferns of North America; by Prof. Eaton; parts 22 to 27.

Native Flowers and Ferns of the United States; second series; vols. 1 and 2 complete.

Scribner's Monthly Magazine; Nov, 1879, to April, 1880.

The Illustrated Annual Register of Rural Affairs; 1880.

Vick's Illustrated Monthly Magazine; 1878 and 1879.

Floral Magazine; Figures and descriptions of the choicest new Flowers for the Garden and Conservatory; by Richard Dean; new series; 1879; large 4to.; 48 large colored plates.

Curtis' Botanical Magazine; vol. 35; by Joseph D. Hooker.
Journal of Horticulture; vols. 36 and 37.
Agriculture of Massachusetts; 1879 and 1880; by Chas. L. Flint.
Michigan Pomological Society; 1879.
Natural History of Plants; vols. 5 and 6; 1879 and 1880; by Baillon.
Success with Small Fruits; 1880; by E. P. Roe.
The Garden; an Illustrated Weekly Journal of Gardening.
The Gardener's Chronicle; vol. 13; 1880; weekly journal.
The Agricultural Gazette; an Illustrated Journal for Farmers; 1880.
The Villa Gardener; 1880.
The American Agriculturist; vol. 39; 1880.
Gardener's Monthly; vol. 22; 1880; by Thos. Meehan.
Country Gentleman; vol. 45; 1880.
Vick's Monthly Magazine; 1880.
Wild Flowers of North America; with Illustrations from original Water Color Paintings; by Isaac Sprague; Text by Prof. Geo. L. Goodale, M. D., of Cambridge; parts 1 to 12.
Flore Des Serres Et Des Jardins De L'Europe; Tome 22; by Louis Van Houtte; 1877.
The Book of Ensilage; by John M. Bailey; 1880.

All of which is respectfully submitted.

CHARLES E. BROOKS,
Librarian.

Hall of Flora,
November 3, 1880.

ANNUAL REPORT OF THE SECRETARY.

To the Members of the Worcester County Horticultural Society:

If ever the Members of a Society might justly indulge in mutual felicitations, surely those belonging to the Worcester County Horticultural may do so at the close of their latest official year. With numbers augmented; with action animated by a fervent, if discreet enthusiasm; with the burden upon our financial state continually lightening; with our Hall in sound repair, in popular demand, and of steadily increasing value; is it not our right to claim due credit for a proper use of the talent committed to us? Have we not, by precept and example, "advanced the Science" of Horticulture? Have we not, by Lectures and Discussions,—free to all, without favor or price; by Exhibitions equally open, of choice specimens of Flower or Fruit, "encouraged and improved its practice"? We have no quarrel with other branches of investigation: with the various, diverse methods wherein the human mind wanders, often losing itself, in search of truth. Every fact in Natural History is of aid to the inquiring Horticulturist. What Insects are predaceous and what beneficial? What Birds are frugivorous? and which, if any sufficiently insectivorous to compensate for their conceded mischief! These are questions in whose apt solution we have a deeper interest,—that of the pocket,—than those to whom they are but the problem of a leisure hour. The cultivation of the Earth commenced in a Garden. Thither, let us trust, as our knowledge of good and evil pefects itself, it will revert. Then,—when the spade shall supplant the plough; when exact industry shall succeed wasteful toil, and the careful harvest of an acre surpasses the slovenly yield from large fields; all shall be satisfied, each shall have enough

and to spare, every man shall pluck from his own vine and fig-tree, Nature itself shall bloom and bourgeon; and in that millennium, where premiums are unknown and committees cannot intrude, the Horticulturists of Worcester County shall recognize Eden regained.

Your Trustees decided, at their Annual Meeting, A. D., 1879, to hold a series of meetings, upon successive Thursdays throughout the winter, then imminent, for the consideration of matters affecting Horticulture in its manifold and multiform relations. The duty of selecting suitable topics; and of obtaining competent persons to deliver prefatory essays; was at the same time delegated to the Committee of Arrangements and Exhibitions. The list of topics is recited, here, for permanent record, and to avoid future, vain repetition:

A. D. 1880.

January	29.	Exhibiting and judging Fruits and Flowers.
February	5.	Manures and Fertilizers.
"	12.	Growing and Marketing Small Fruits.
"	19.	Window Gardening and Winter Flowers.
"	26.	Out-Door Flowering Plants.
March	4.	Orchard and Vineyard Fruits.
"	11.	Does Horticulture Pay? And How?
"	18.	Trees, and Shrubs, for Ornamental Purposes.

The attendance at those meetings was large, sometimes thronged; and always such as to excite the astonishment of gentlemen from the metropolis, who seemed not quite aware of the attractions of Horticulture to people with whom it was not merely a holiday pastime. The audiences, composed in fair proportion of either sex, came to learn from those who might be presumed masters of their chosen subjects; and, in most cases, it is believed that those hopes were not disappointed. Inquiry was challenged; and discussion ensued, when interest had been aroused. Conflict of opinion, where it does not degenerate into political or religious bigotry, is ever wholesome. The air is clarified; prejudice is dissipated; novel truths find wider acceptance; and the faith, delivered to and jealously guarded by the saints as an exclusive possession, is no longer rejected by the sinners. The great Apostle of Democracy;*—of perhaps the most philosophical

* Thomas Jefferson.

mind among all the statesmen hitherto produced in our Republic; boldly declared that "Error may be safely tolerated, so long as Reason is left free to combat it" In the informal discussions among our Members there must, of necessity, be much crudity of thought and even more incertitude or inelegance of statement. Sometimes they are weighted down to bathos by ponderous expression; and then again they provoke to levity, even as the sparks fly upward. But, throughout all, is current the clear stream of Truth; now diverted; at times obstructed; occasionally roiled for the wolf by the lamb at the fountain-head; nevertheless rippling over the rocks, sparkling in the sunlight as it eddies along, swelling always in its course and finally merged in the ocean of serene and undisputed faith. We could not anticipate and did not secure unanimity; but curiosity was appeased; utter ignorance informed, or put upon inquiry; and the average will or craving for instruction satisfied by such a harvest of experience as is seldom threshed out from similar sheaves.

The largest measure of credit attaching to the inception and prosperous conduct of that series of meetings belongs to *Vice-President* Hadwen. He was indefatigable in his efforts to procure essayists of knowledge and worth; scouring the State in the search for them; allowing them no respite until they consented to his request; and seldom, even then, relaxing his grip until he had seen them fairly inside the Hall of Flora. Without his earnest co-operation, it is not too much to assert that the whole effort must have measurably failed. This tribute to his efficiency and zeal is but just. And it is paid, all the more heartily, that justice is not always awarded in this world;—and he might not elect to await it—hereafter!

Throughout the entire period of time, occupied by those Essays and Discussions, mind and body were alike active and usefully employed. And baby hands, or feet, as your Secretary can gratefully attest, bore witness during the wintry days to the deft skill of the nimble fingers that had kindly supplied their tiny covering. The hum of the spinning-wheel, in our households, may be hushed forever. But the Knitting-Needle! fit emblem

of feminine tenacity and thrift; shall it not flourish and multiply so long as woman buds and blooms!

The practice of holding Weekly Exhibitions, adopted by your TRUSTEES as a settled policy, after mature deliberation, is justified by its results. The examination of specimens, whether of flower or fruit, was somewhat hampered by the formality of set meetings in the earlier months of the calendar year. But, of the excellence of those specimens, shown in complete maturity, there could be but one estimate among competent judges. The interval between those Exhibitions was not so wide as to interfere with or prevent comparison; whereby alone can the gradual or intermittent process of development be noted. Ampler opportunity is thus afforded for the introduction of new varieties by the pioneers in their discovery and cultivation. It is only the simple truth to state that never, since the organization of this Society, have our Halls accommodated such brilliant and tasteful displays of Flowers and Plants. A pretty rigid enforcement of the Rules,—established in the interest of all,—has tended to educate the eye and guide the hand; thereby conferring an ultimate benefit upon some who might at first object to the exaction of such unbending conformity. Yet,—if "Order is Heaven's first law,"—it surely should not be our last. Precision of definition or requirement tends to the education of crass ignorance and equally to the refinement of trained taste; without which, in realization or prospect, those who, like your Secretary, have inhaled from infancy the sweet fragrance of bud and blossom, would not suffer their names upon the Committee. For, of all things utterly dreary and desolate, that which must be deemed forlorn, beyond rivalry and without parallel, is a cultivation that promises no return;—a harvest whose apples have no savor but of Sodom.

Nor were you deprived of the chance of contrasting what you had gained with—that which you had chosen not to retain! The *New England Agricultural Society* held its usual Exhibition of Flowers, Fruit, Photographs, and Parlor Organs, in the early days of September, which was skilfully organized and profitably conducted. But you must have noticed that, save for the financial results, the success of even such an Exhibition is scarcely commensurate with the enormous waste of time and toil that it

imperatively requires. Any close observation of it, in detail, becomes impossible from its very bulk. Objects that would be worthy of notice are lost in immensity; and the commonplace attracts attention because of its omnipresence. Committees are obtained with difficulty to undertake a task of such appalling magnitude; and, when obtained, find it impracticable to concentrate articles of merit; or to approximate, at all closely, their relative degrees of excellence.

Our own Weekly Exhibitions, rigidly confined to specimens of unquestionable superiority, latterly taxed the whole time and strictest attention of their Committees. Faith that there would be something worth seeing prevailed in the community; and our Halls were thronged, as never before, by an eager and interested crowd of witnesses. It is a pleasure, in itself, to labor for such a consummation. We have now a plane of achievement wherefrom to measure. Our aim may be full high advanced; but, with a continuance of such enthusiasm and zeal as inspired our Members, during the season just past, it cannot be impossible of attainment, however exalted. Shall we content ourselves with aught less than absolute excellence? It rests with yourselves, Gentlemen and Ladies of the Society! to determine.

The unusually mild Winter, followed by a Spring dryer than ordinary, was favorable to the development of every form of Insect-Life. Then, if ever, was the time for the Birds,—objects of cockney or girlish adoration, to vindicate their fair repute and show some good reason for a legalized existence. The whole art and science of Chemistry is exhausted to reduce, in whatsoever measure it may, the infinite swarms of our Insect-Foes. No one stops to reflect that arsenical poisons may prove no more deadly to the *Doryphora decemlineata* than to the parasite which saps his life. No one appears to care whether the *Turdus migratorius* impales upon his merciless beak insect-friends, or foes, of man. The country is kept in a perpetual turmoil because Four Million Negroes will not—as did Three Million White Men, a century since,—hoe their own row! Agitation is ceaseless because Woman has not her Rights,—Heaven save the mark! Man making no perceptible fuss as he packs the burden of his wrongs on a back galled to the quick. The Earth grows fat, and laughs, with her

bounteous harvest; and we are complacently pointed to the countless sheaves, or profusion of fruit, as the direct consequence of Republican election or Democratic free-will and foreknowledge absolute. The very hairs of our head are numbered and the matter of least moment to man is of some account in the Divine economy. But the caucus—the stump,—and the fat snug sinecure, are the successive steps and ultimate measure of Yankee concern;—which finds but slight incentive in an occupation that developed a Cincinnatus,—a Phocion,—a Washington! And the politician,—in the General Court,—is full-fledged—that is all! He has moulted; his feathers are glossier and newer. But, for any benefit to the Commonwealth, he might better have left a vacuum; the abhorrence of nature would be the same in his presence or absence. The common concerns of life disturb not him; but rather who shall be gauger or tide-waiter, at the foot of State Street. Agricultural Education may perish for aught that he cares; it will be none of his funeral. During the canvass,—his hair will be full of hay seed. At the State House, where he finds himself misplaced by the chances of the political roulette, (a square peg in a round hole?) as the Horticulturist appeals to him for relief from legislation that discriminates *against* himself, he elongates his ears—the latest step in evolution,—flattered at hearing kindred tones in the raucous cry of the *Turdus migratorius* or the dissonant shrieks of his congener —the *felivox.*

Any one can compel or obtain a hearing,—possibly gain relief or redress,—save only Horticulturists, who would fain have the grain and fruit crops of the country protected from rapacity and waste. These Reports have steadily contended that the benefits claimed from the in-lawing of Birds,—assumed to be insectivorous,—are, if at all actual, grossly exaggerated. At the risk of exhausting your patience, I have translated an article from the *Revue Horticole*, wherein the writer tersely, effectually, it may be hoped finally, disposes of the whole shallow sentimentalism. Hereafter, with the bird as with the quadruped, let it be—"Root, or Die!" But listen to the French savant, as formulating his views, he declares that

"1st,—Birds are only gathered in flocks, greater or less, at the

periods of their migrations, in Autumn and Spring; that is to say when most insects are infinitely less numerous than during the Summer. At other times, they live in couples, usually scattered, but seldom in cultivated grounds; while insects invade in swarms the trees which they wish to attack,—the products of the earth of which they are foes.

2d,—Birds destroy enormous numbers of insects: but, of those insects, many are of no consequence; others are eminently useful; and the species actually noxious, compared with the aggregate, are so slightly reduced that the birds, though making a great consumption of these little creatures, aid us but little. *They even injure us*,—many of them devouring our fruits, as well as the grain sown in the earth, or harvested; and all of them destroying multitudes of insects that, as flesh-eaters or parasites, render us great service.

3d,—The insects whereof we have most to complain, are,—some large enough to defy birds; others (and these are usually the most formidable), too small to attract their notice; still others of too disgusting a flavor to excite their appetite; many are nocturnal, and conceal themselves by day, with that instinct of self-preservation which is as well developed among them as among the larger animals; or, keeping motionless, do not reveal themselves to the eye of the bird which easily detects and greedily pursues insects on the wing or in motion. Some live under ground, or in dwellings; all are endowed with a fecundity that astonishes even the imagination and which, in all cases, is such that man, in spite of his utmost assiduity and perseverance, even in garden cultivation, cannot relieve himself from them,—often cannot free his house from them,—may I not say—a single room in his house?

4th,—Caterpillars and worms,—the chief workers of mischief, usually live concealed under ground, beneath the bark of trees, in the depths of the woods, in the stalks of plants, in fruit,—in places that are inhabited. They are concealed or protected by silken webs and yield but a slight tribute to birds. Those which are developed in the open air, are generally bristling with a skin that repels attack; some are nocturnal and disappear before dawn; their very minuteness protects others.

When we reflect upon these considerations—the fruit of experience; when we would subject them to a rigid scrutiny, with the desire, if possible, of finding them unfounded; nevertheless without preconceived ideas and with the intention of knowing the truth; I doubt not that you will adopt my opinion and that even those who are most partial to birds will admit that they had not thought of all this. For myself I am so thoroughly convinced that I dare, without presumption, to challenge contradiction and to defy criticism.

But, you will say,—cannot the cultivator expect any help but from himself? I have already declared, at the outset, that the ability of man to contend with Insects is strongly doubted: and that it has been the inadequacy of his efforts, the careful observation of facts, which have forced this painful conclusion at the very time that there was

most faith in the efficacy of human intervention. Now,—when from all sides we are invited to the war upon insects; and Nature is ransacked to supply us with some means of defense from their ravages; I proclaim the impotence of man. And I say that,—happen what may, and generally speaking,—it is indisputable that man has not, from an Agricultural point of view, any effectual means of preventing the invasion of Insects, or of compelling them to fly—never to return."

With more, characterized by the same French charm and felicity of expression, that might be profitably repeated here, did time allow. You observe what stress is laid upon the fact, obvious to all save those who having eyes see not,—that Birds are omnivorous and not at all discriminating in their appetite. This position, so often assumed in these Reports, has been thoroughly demonstrated by *Professor* Forbes of Illinois, upon the pages of the American *Entomologist*:—

"Investigating the contents of Twenty-eight (28) Brown Thrushes (*Turdus rufus*), Thirty-seven (37) Cat Birds (*Turdus felivox*), and of Forty-one (41) Robins (*Turdus migratorius*), he found their food largely made up of insects. He carefully examined all those insects, and, knowing their names, character, and habits, discovered the hitherto unsuspected* fact that the family of Thrushes is inordinately destructive to *beneficial* insects. Of 150 Thrushes examined, 46 per cent. had taken those useful insects known as *Carabidae*; while of 194 birds of other families only 5 per cent. had eaten them," &c. &c.

We may be powerless against Insects, as the French savant declares: but the sense of impotence, as concerns them, should not make us so idiotic as to foster, by legislation, the health and long life of our natural foes. Beneficial insects have neither bloom, nor song, to commend them; yet, throughout their insignificant and outlawed existence, they cease not to toil and spin in our behalf.

In a reproof addressed, by one of the Minor Prophets to the People and Priests of Israel, for their manifold iniquities, he chiefly and bitterly denounces them for that "they have devoured their judges." In this Nineteenth Century, they are called Committee-Men; but, equally as in the ages before Christ, are those who devour them "hot as an oven." Speaking for the Floral Committee of this Society, it may not be impertinent to

* The statement is too broad. The "fact" had often been asserted, was always suspected, and, by *Professor* Forbes is at last demonstrated beyond peradventure. E. W. L.

say that while they can endure abuse, they do not hanker after it! The gentlemen whom you appoint to serve you, in such capacity, are presumed, from the mere fact of their selection, to be fit for their place. If not a too violent presumption,—might they not be credited with honesty of purpose and integrity of action? "To err is human;" and the Members of your Committees are but mortals. Nevertheless, spending hours at a time in an attempt to apportion strict justice to all concerned (can it be possible that this is what is least wanted?) they should be held exempt from the wanton imputation of corrupt decisions, or motives, at the bare prompting of individual chagrin. None would concede, more readily than your Floral Committee for the past year, that their superiors might be caught by going out into the highways and compelling them to come in. But the highways were not thus raked, for A. D. 1880; so that Flora, to establish her church, was constrained to choose her deacons, if not the whole congregation, from such material as she could find handy. They may not have been, it is true:

> "Sugar and Spice
> And everything nice:"

But neither were they

> "Rats and snails
> And puppy-dogs' tails."

Simply genuine men, and true horticulturists; of whom some flatter themselves that they know how to grow flowers, and others remember how flowers have been grown, for fifty years. Set against this the narrow conceit which leads each or all to fancy their own plants pre-eminent; confront a straight forward purpose with the passionate rivalries of sex; keeping ever in mind that, while there would be no excuse, there can be no occasion for partiality; and who will fail to exclaim with the great epic Poet of our Mother-Land,—

> "He that has light within his own clear breast,
> May sit i' th' centre, and enjoy bright day:
> But he that hides a dark soul, and foul thoughts,
> Benighted walks under the mid-day sun;
> Himself is his own dungeon."

Probably none of you would "work a free horse to death." But did you ever stop to think of the tasks that a Floral Committee must assume? In judging between exhibits, for instance, you insist that the specimens shall be "annual, biennial and all herbaceous." Your Schedule calls for a stand of "Annuals," exclusively. Perhaps you insist that a display shall consist of "distinct varieties." Now, it would never do for a Committee of the Worcester County Horticultural Society to confess themselves at a loss,—no matter how abstruse or occult the proposition. Yet so eminent a Florist as Shirley Hibberd admits his inability to determine what is a species! But hark! to a dozen women when, with assonant clack and as fast as their tongues can wag, they insist that their particular bloom in question is annual,—is herbaceous,—or is of a distinct variety! It seldom matters much if the Committee were unanimous and wholly positive; exceptions are taken, all the same, and a jury of appeal is quickly formed from sympathizing tales-women. Which, besides being entirely out of place, pleases nobody, earning neither premium nor gratuity.

Now in what way shall the mode of making awards be altered and improved? It is assumed that the terms of the Schedule will be defined in as clear and precise phrase as our language allows. There will not always be time to ransack the dictionary; as indeed there ought never to be any need of so doing. Besides,—the wells of English pure and undefiled are not invariably those wherefrom the botanist draws refreshing draughts. Noah Webster and *Sir* Joseph Paxton may not think alike; and how shall men define accurately, if they do not think correctly? Asa Gray and Leonard Worcester might live in the same town for years; but what would be the ordinary acceptation of a word to the *Lexicographer* might fail to convey any intelligible sense to the learned *Professor*. Horticultural terms, after all, like others, must be defined ultimately according to their common acceptation among those who use them. And, in their official interpretation, the decision of the Committee should be received as final,—without cavil or protest.

It has been suggested that awards might be made, in future, through a Committee consisting exclusively of females. Among

the incontestable rights of the sex,—in this Society, is that of becoming Members by compliance with a very simple condition. It is claimed that an advantage would follow upon such an entire revolution in our practice. For that the harmony which so strikingly illustrates the opinions and actions of Woman—in a collective capacity ; like the notorious concord among musicians ; would facilitate decisions and insure unanimity in their adoption. Your present Committee, exclusively male,—although its Members are upon the best of terms with each other, is generally divided in judgment. A change in its constitution, however radical ;—even to a degree that should involve the substitution of one sex for the other ;—might be worth the experiment, if simply to secure the absolute agreement of all instead of the rule by a bare majority. If it be objected that, all being competitors, no decision would be rendered, since each would naturally prefer her own ; the answer is obvious and sufficient, that competitors are not excluded from male committees. Also, that if men are content with a Committee constituted as suggested, women cannot possibly so impeach the character of their sex for fairness as to allege, if only by implication, that they are naturally incapable of framing an impartial award.

As little alteration should be made in the Premium-Schedule for Flowers, Plants, &c., as may comport with your better judgment. It is so much gained,—to have a definite and fixed proposal, under which Committees and Competitors have once acted, and whose terms have become reasonably intelligible. Most of the assignments for A. D. 1880, were found to be seasonable : a piece of extreme good fortune in a very exceptional year. But it is worth your serious consideration, whether it is in the interest of an honest and true Floriculture, longer to encourage what are technically termed Floral Designs ! If regarded merely as an arrangement of Flowers, a basket or bouquet better answers the purpose ;—and without hypocrisy. For the rigid forms of the glass-blower or iron-founder, however worthy of premiums at a Mechanics' Fair, constrain the eyes and hands too rigidly to meet the easy and graceful requirements of one who would display her individual taste. Let those who will impose a cross upon the mortal remains ! or attempt to anchor the fleeting soul !

If anywhere appropriate;—upon our tables, and in this Hall dedicated to the advancement of Horticulture, they are but meretricious ornaments. Be it our choice, rather, that nice sense of fitness which revels in the proper collocation of colors; in the gradual shading or strong contrast of tints so cunningly contrived, during the season just past, upon many a Thursday, in bouquet or vase, in basket or stand. Hang your harps upon the willows, if it so please you! But when you would display catkins in the Hall of Flora, leave the harps in suspense!

One of the ablest men that Worcester County ever produced, in an address before the Worcester *Agricultural Society*, long years ago, specified the sub-division of small towns (why not large, as well?) into countless religious societies, as a serious cause of their decline in prosperity and thrift. United,—they could keep in repair the roads, usually hilly and therefore costly to maintain, which led to and from the meeting-house: besides being able to make their worldly ends meet. Split into discordant and warring factions, their burdens multiplied as the strength to bear them became dissipated; so that, at length, man grew querulous from perceiving that his sieve would not fill, and God might well complain that He was robbed of the devotion of a whole heart. Worship grew languid, and Religion, under the mask of Theology, ceased to exert a wholesome influence. The warning of David Henshaw fell, like the Scriptural seed, upon stony ground. Sects continued to throw off swarms, and endured a starveling existence at the cost of the Towns which, from that day, have steadily receded in population and wealth. Yet the harvest multiplies: the laborers tramp around, with that barrel of old sermons, to fresh fields and pastures new, the response falling upon our ears, like a knell, in a monotone undying and never-ending,—The Heathen are at your own doors! Your Secretary had not supposed that there could be any strife between the disciples of Christianity and the devotees of Flora. Yet, what else save ignorance, which surely cannot be predicated of any one in this Commonwealth of Meeting-houses, could induce a prominent member of this Society to exclaim,—in response to a suggestion that the habit of cavilling at the awards of Committees would lead her to dispute the Final Judgment?

"The Final Judgment! What is that?" Was the statesman right? And must Flora indeed become a party to the irrepressible conflict between God and Mammon?

The question is often raised,—what is the difference between an Amateur and a Professional Florist? With a slight change of names, as from Florist to Gardener,—the subjoined classification of exhibitors by the *Gardener's Chronicle*, (Eng.), would appear to be sufficiently definite:

"As used in reference to country shows, the designation 'Amateurs' is understood to apply to persons who manage their gardens themselves, or with more or less assistance from a jobbing gardener or garden laborer, and who do not systematically derive pecuniary advantage from the pursuit. Gardeners, properly so called, are either nursery gardeners, market gardeners, or gentlemen's gardeners; the latter being employed by private individuals to undertake the management of their gardens for them.

No rule or description can be understood to be of absolutely universal application: but exceptional cases should be dealt with equitably, on their own merits, by the managing committee at the time."

Points are often mooted that seem to be suggested and influenced by a querulous spirit of casuistry. Such, and all others as well, are best settled by the application of sound common sense and a rigid impartiality.

The Small Fruits were displayed in their usual plenty, throughout the Summer. A protracted drought, during the period of bloom, materially diminished the crop of *Strawberries*. As they were ripening, frequent and timely showers came to the aid of the grower, enabling him to save a fair yield of exceptionally perfect fruit. The experience of each year but confirms the imperative warnings of the past that, for absolute success in the production of the Strawberry, irrigation in some form is indispensable. The plant may stand with its feet in water or it may luxuriate in the cool moisture derived from a heavy mulch. There may be patches of ground that, from peculiarity of soil or conformation, will answer the purpose naturally: but, as our vernal seasons have chanced, latterly, the average cultivator must have something else to depend upon than the fickle skies of May or June. It is a satisfaction to note that this truth is appre-

ciated; and is to be acted upon by some of our enterprising and wide-awake members.

Many new varieties have been introduced, in recent years; and a large number of them, A. D. 1880, upon our tables, illustrated the ambition of our local pomologists. Tastes differ so extremely that it can be hardly worth the while to descant upon their qualities. He who grows for the market may be trusted to look out for his own interest, and will require no guidance in determining what will suit the palate of his customers. But this Society does not consist of market-gardeners. And the large majority:—whether desirous of purchasing a choice kind, or of cultivating it themselves, at greater cost and uncertainty of any return; may well ask if aught has been developed, since the *Wilson* was discarded, to surpass the *Charles Downing* for general good quality and adaptation to circumstances, or the *Triomphe de Gand* and *Jucunda* for special excellence when treated in such manner as to meet precise requirements. May we not go further, and fare worse?

A paragraph in the *Gazette*, of this city, under date of June 12th, ult., will afford an inadequate idea of the demand for the Strawberry, as an article of food or relish, in Worcester and its close vicinity; while, at the same time, it indicates how vast are the possibilities, in the future, for the market-grower who will devote both patience and skill to his work and be content with a reasonable profit upon his investment:—

"Some idea of the popularity of the Strawberry as an article of food in this city, may be gained from the fact that the wholesale dealers during the last week have been handling from 7000 to 8000 quarts per day. This does not include any native berries, a considerable quantity of which have been picked and sold."

The most of that large quantity of berries were small, but partially ripened,—not over clean; and were certainly not commended to a taste, in the least degree fastidious, by the manner in which they were "deaconed" upon arrival. In fact, a person is not required to be fastidious, to feel qualmish over the employment of wooden tooth-picks in the selection of tempting specimens for the apposition of a top layer! However, the demand was greater than the supply—deserved. And the local crop,

as soon as it was fit to be gathered, controlled the market. Whether the price obtained was generally remunerative can only be inferred from the fact that those who have been longest, and most largely in the business, are extending rather than curtailing their operations. If our people could only be induced to regard and treat fruit,—the Strawberry especially,—as food, there need be no limit to the crop that would be wanted. Sometime, in a not remote future it is to be hoped, this truth will find common acceptance,—that the Esquimaux diet is only adapted to the Esquimaux climate: and that greasy steaks, from obese Short-Horns, are about the last morsels that a sensible Yankee should put under his waistcoat during our July suns. With plenty of choice Strawberries snugly tucked away, one may feel that same sense of absolute content which the fashionable lady remarked was unattainable from religious conviction, and as only to be experienced from the knowledge that she was perfectly dressed.

A recent writer upon "Success with Small Fruits," publishing, at excessive cost, a very excellent work in which much that was known before is shrewdly and well sandwiched between later facts and theories; when treating of *Raspberries*, remarks that:

> "The Fastolff, Northumberland Fillbasket, and Knevett's Giant, are fine old English varieties that are found in private gardens, but have never made their way into general favor."

That those varieties are not widely cultivated may be true enough. But has not the cause of that neglect been ignorance of their very existence? Your Secretary,—whose eyes are not always closed,—lived for years unconscious that there was such a berry as the Northumberland, although the late D. Waldo Lincoln was growing it, the whole time. After it had been transplanted to his "private garden," and its fruit been exhibited upon your tables, you are able to judge whether it "made its way into general favor." No finer display was ever seen than that perfect array of specimens from Olean street, part only as they were of the famous yield which, A. D. 1880, once more vindicated the soil and signalized the skill of our associate.* Ask

* Frank J. Kinney.

him, not whether the Northumberland Fillbasket has been, but if it ought to be, widely grown?

Again,—the same writer says, *currente calamo*, that "the Belle de Pallua and the Hornét are also French varieties that in some sections yield fine fruit, but are too uncertain to become favorites in our country." How, where, and by whom was that determined in regard to the Hornét? The experience, to the very contrary, of Grimes & Meyer, of Pittsburg, Pa., was quoted by your Secretary, in his latest Report; and also the testimony of Thomas Meehan to the enormous crops that he had but just seen in Germantown. Your Secretary cannot yet speak with thorough assurance: some degree of reserve becoming one in his official position. But he can at least state that he is so well pleased with the Hornét, so far as tested hitherto, that he has enlarged his plantation of it, slightly to the restriction of other approved varieties. Its history and character are described by Hon. Marshall P. Wilder, who writes of it, and of another variety, as follows:—

"Boston, Feb. 22, 1880.

Edward W. Lincoln, Esq.,

My Dear Sir:—

Your kind favor is in hand. In regard to the Raspberries, Hornét and Souchettii Blanc (or White Transparent), I would state that I imported them from France, some Twenty years ago and have grown them ever since in my grounds. They were produced from seed, by Charles Souchet, near Paris, and put in trade about the year 1855.

The Hornét is a very strong, vigorous grower, and nearly hardy, but not safe here in some winters without covering. Its fruit is of the largest size, of a dark crimson color; its flesh quite firm and good, but not of the highest character. It is productive, not early, but remains a long time in the season of ripening.

The Souchettii Blanc, or White Transparent, is a healthy, good plant, and produces most abundantly. The color of its fruit is a very pale yellow, almost white; its form is long, thimble shape, parting freely from the bush at maturity; and, if not allowed to remain too long before picking it retains its shape and makes a handsome dish. Its flavor is not up to the Brinckle's Orange, but it is a very valuable variety for constant supply.

Most truly your friend,
Marshall P. Wilder."

The influence of the scion upon the stock, or conversely, of the stock upon the scion,—is it all a dream? Or a serious truth,

hitherto scouted, but deserving thorough investigation! Perhaps nothing is actually demonstrable. But did any one anticipate Gravitation until the apple fell at the feet of Newton? Our learned associate,—the Editor of the *Gardeners' Monthly*, copies from the *Gardener's Chronicle*, (Eng.):

"A White Doyenne pear, which had borne nothing but worthless, cracked fruit, for years, having three years previous all its upper branches grafted with Autumn Bergamot, the lower branches of the White Doyenne being suffered to remain. A sprout of Marie Louise, growing just below the point of union, was overlooked in the grafting, and bore, last year, clean, perfect fruit; all the rest of the tree being cracked and worthless as before."

And comments thus:—

"The most probable influence in accounting for this is, that this shoot had received its conditions of health from the Autumn Berga mot above it."

The conclusion is not inevitable, since a check in the development of a tree, imposed by the excision requisite for grafting, might of itself have such results. Yet what say other observers who, having eyes, see? Take the *Belle Lucrative*, for one case! almost destroyed by the Blight; but which, grafted with the *Washington*, has since betrayed no signs of disease, whether in scion or stock. And then the *Glout Morceau*,—double worked,—which yielded one good crop of superior fruit and thereafter blighted every year! Grafted again with the *Josephine de Malines*, there has been no blight since the fortunate union. Was this an example of the reflex action of the stock upon the scion? Or did the scion control the stock? Was it "Natural Selection,"—or merely an instance of—I don't know!

Yet again,—scions of *Glout Morceau* grafted into the *Lawrence*, have so far continued, for years in succession, to make a thrifty growth, without symptoms of disease in the wood of either variety. True,—unlike the other cases cited, this tree has not yet borne fruit. But are fecundity and the Blight inseparable? Does a tree ever blight that is barren? Or, unless and when it is set full of fruit! In which case, may not its decline and death be attributable to exhaustion, caused by a lack of proper nutriment in the soil, itself, impoverished by an unbroken

succession of ravenous crops? The poet represents the princely philosopher of Denmark as reminding his friend,—

> "There are more things in heaven and earth, Horatio,
> Than are dreamt of in our philosophy."

We planted our Pear-trees in virgin soil and gathered from them in profusion. Stable-manure, wood-ashes, soap-suds, refuse lime, or wool waste, one and all were returned to the earth, as fertilizers, when obtained; and, so long as obtained and used, there was fruit in abundance, while the Blight was unknown. After the waste of fertilizing substances, coeval with, or consequent upon the inroad of sewers, ensued emanations poisoning the atmosphere that, lethal to man, may well result in vegetable atrophy and death. We might have our choice of theories, were they worth election. Rejecting them,—how shall we decide the conflict of inconsistent facts!

After all, if a really good Winter pear should prove impossible of attainment, we must console ourselves with the knowledge that one, at least, of the Autumnal varieties is re-appearing, here and there, after a long interval, in more than pristine excellence. The *St. Michel*,—a tradition to most of this audience,—as lately shown from Linden *Street* and the Bloomingdale *Road*, more than justifies the faith of yore: and exemplifies, as nothing else could, so well, the final perseverance of pomological saints.

The growth of fine Pears, in this County, is not difficult: and there is no reason why a journal,* widely circulated among our farmsteads, should convey such an idea. "A sheltered location is of the highest importance. If it is not furnished naturally, then it should be done with close hedges, and high board fences. The land should also be thoroughly underdrained." It would be interesting to learn how many of the Members of this Society have planted their trees, or are now cultivating them under such conditions! An orchard, upon the promontory of Nahant, must not be suffered to stand for an example to the pomologists of Worcester. Boreas seldom breathes in zephyrs: but who shall say that there is not health in the blast, and that, cool and bracing, it does not benefit the tree, rendering it sturdier, and,

**The Massachusetts Ploughman.*

to some extent possibly, ridding it of insects? The Blight? we know not why it comes, nor what its origin. And yet the air, like the blood, stagnates when its motion is arrested; and stagnation at the last, is surely death. Why not as well attribute that mysterious disease to the stoppage or poisoning of circulation, impeded on every side by lofty buildings in villages and cities, whose erection and emanations check and infect the life-giving current of the atmosphere so that they can no longer bring "healing on their wings!" There had to be clearings to make room for the first Orchards; and it is now too late in the day to claim that Orchards should be girdled with a forest, as a pre-requisite to their successful growth. Have we not already enfeebled them by too much tenderness of treatment,—impairing the constitution of a tree, whose wood is of proverbial toughness; and whose longevity, where man has not sapped its conditions, exceeds memory if not tradition? Whose land,—of those who listen to me,—is "thoroughly underdrained?" Is it not the truth,—and the whole truth,—that a thrifty pear-tree, set in a hole sufficiently capacious; properly set at that; amply manured for food and well mulched for drink; will do for us what it did for our fathers? Return a larger yield of fine fruit than we can consume, at home; or find a convenient market for, abroad! "Hedges, high board-fences, and thorough underdrainage" for those who like; and who have more money than they know how to waste otherwise. Let us be content,—neither discouraging nor rejecting experiment,—if we can continue to produce, in the old way, such specimens of the *Comice*, *Duchesse*, and *Sheldon*, as were exhibited, in this Hall, on the seventh of October ult.

The *Duchesse de Bordeaux* commends itself, as a late keeper, and was approved as of at least fair quality, throughout the last Spring. That it will meet the demand for a late Winter, or Spring, pear,—may be doubted, because of its quality. On account of its unsettled rank; and to obtain information for some who desired it; your Secretary was induced to address a letter to Mr. Barry which, with his reply, and the comments that it made imperative, are incorporated in this Report:—

"WORCESTER COUNTY HORTICULTURAL SOCIETY.
HALL OF FLORA,
WORCESTER, MASS., Feb. 3d, A. D. 1880.

PATRICK BARRY, Esq.

Dear Sir:—

* * * * * * *

Have you settled down to a decided estimate of the merits of the pear—Duchesse de Bordeaux? I have the impression that it has not maintained itself in your judgment. With us,—after a partial, possibly too limited, test, it is assuming rank as a *good, Winter Pear.* That may not be extravagant praise,—you will perhaps say: but how many varieties—and what are they—will you venture to rate so high? I am often asked to recommend a Winter Pear. Since the Glout Morceau succumbed to the Blight, I will confess to being in a quandary. What do you advise,—and upon what grounds?

I remain, very Respectfully and Truly,
EDWARD W. LINCOLN,
Secretary."

"MOUNT HOPE NURSERIES,
ROCHESTER, N. Y., Feb. 10, 1880.

EDWARD W. LINCOLN, Esq.,
Sec'y Worcester Co. Hort. Society,
Worcester, Mass.

Dear Sir: * * * * * *

The Duchesse de Bordeaux pear is so difficult to ripen, and when ripe only *half*-melting, we have concluded to drop it. We have it now, fresh and handsome.

Have you Duhâmel du Monceau? At present moment this is fine. I will have one or two sent to you. Josephine de Malines is still in good order and is good enough. The tree is not quite the thing, but is sound and healthy. A good way to get it is to graft on a good grower.

We had d'Anjou at our meeting Jan. 28th, in the finest condition; also Winter Nelis, and Jones's Seedling, &c. I would advise you to get the last named, if you do not already have it. Lawrence too is excellent up to New Year.

Truly yours,
P. BARRY."

"WORCESTER COUNTY HORTICULTURAL SOCIETY.
HALL OF FLORA,
WORCESTER, MASS., Feb. 21st, A. D. 1880.

PATRICK BARRY, Esq.,

Dear Sir:—

The pears—Duhâmel du Monceau—were received in good order,

but did not impress us very favorably. Nor did it seem to us that it was *in them*,—so to speak. Of course we are familiar with Josephine de Malines and, especially, Lawrence: but, perhaps owing to the season, they have been out of date for a month. I presume that a proper fruit-room would preserve them.

I doubt very much if a first class Winter Pear exists. One, for instance, that would rank among pears, as among apples do the Baldwin, Roxbury Russet, and Northern Spy. But others ask for such a pear, and I was sure you would be familiar with it, were it in existence. The Beurre Easter was long since abandoned: it was so difficult to ripen.

A really good, late Winter Pear would be a 'handy thing to have in the house,' in those alternate years wherein the assurance of seed-time and harvest does not hold good for the Apple-Tree.

Excuse me for troubling you, and accept the annoyance as a penalty inevitable upon pre-eminence in Horticulture.

Yours most sincerely,

EDWARD W. LINCOLN,
Secretary."

The newer Pears are not yet perhaps fully tested. One of your TRUSTEES;—alike eminent at the Bar and in the Senate-Chamber, as well as *facile princeps* in a political convention; has likely pronounced the doom of one variety, by citing the adverse opinion of a lady. She thought of the *Souvenir du Congrès*, as is reported of the Englishman feasted at Nahant; who summed up the merits of a chowder by the pithy remark that "he had eaten worse things but—not much!" But our distinguished associate should remember that, although his fruit was elongated, its name was abridged: and that, if an adjective modified the character of the *Congrès Pomologique*, it could possibly qualify other assemblies of a similar genus.

Your attention was called to the *Bonne du Puits d'Ansault*, in the Report for A. D. 1879, because of its exaggerated nomenclature. The variety has been introduced, on account of its repute, by those who would "prove all things and hold fast to that which is good;" but it is not yet known by its fruits. Among those who are testing it, for your ultimate benefit, may be mentioned *Deacon* Lovell, of West Boylston, whose Grapes are slightly inferior to those borne from Eschol; and another, whose aspirations, if soaring to the title of Deacon, are forlorn

enough. Of that Pear,—there is the following description by those who disseminate it:—

"Bonne du Puits d'Ansault—André Leroy, 1865. medium size; melting; juicy, and very fine-grained. One of the finest in quality of all newly-introduced foreign pears; fully equal to the best Seckel. Tree moderately vigorous. September."

High praise that, from Patrick Barry! and what he should have weighed well before proclaiming so widely. "Fully equal to the best Seckel!" Have you ever seen such, or do you expect that you ever will? I put that upon record, here and now, that you may refer to it when the variety can be tested. For otherwise, how can you appreciate the keen perception of him who sees what eye hath not seen; or hold to his full measure of responsibility one who assumes that which no man hath yet proved!

Of "*Earle's Bergamot*," A. D. 1880, nothing further can be declared with confidence. Owing to some unexplained reason, it was not exhibited, at its maturity, by our associate,* who alone has perfected it, as he alone preserved it. In response to a request that he would furnish some specimens for your inspection, Mr. Townsend stated that he had none remaining,—as it had been gone for a week at least. Others of your members have scions growing; and from them a report may be expected in due time.

What shall we do with our Apples? is a cry that increases in intensity with each recurring harvest. Some have felled their Orchards:—an effectual, but quite idiotic method of avoiding the trouble that comes from having too much of a good thing. In Vermont, they have learned how to convert cider into jelly: the next step in the process, and one that is equally successful, being the conversion of the jelly into Massachusetts dollars. But palliatives only soothe: they are not remedies. Why shall we not find a market for surplus Apples as well as for Corn and Cotton! Already, a large commerce has sprung up, that promises ere long to make the Mother Country an eager customer for that staple fruit, as she ever was of those other essential products.

*Mr. Velette P. Townsend, of Quinsigamond Village.

A late newspaper item represents one of our *Vice-Presidents** as filling an order, for apples, from Florida. Some forty (40) years ago, the late *Gov.* Lincoln shipped a barrel each, of the Baldwin, and Roxbury Russet, to a son, in the Federal Army, who was then stationed at Tampa Bay. They were wrapped separately, packed with care and tightly; and were received in a perfectly sound condition. While the shipment of our Apples, southward, is not a new experiment; it is yet true that it has never become a settled practice. Still, there would seem to be no reason why a profitable trade might not thus be developed. What would be Winter Apples—grown here—mature in late Summer, or early Autumn, if cultivated at the South. Besides they are apt, from the rapidity with which they mature, like the pears of California, to be deficient in flavor. Facilities of inter-communication have so improved, recently, that the Apple can hardly be classed among the perishable fruits. Certainly it is durable enough to traverse the paths of the Banana and Orange.

The Taxes upon your property, for the year 1880, were paid, under Protest. When so much of both Real and Personal Estate is exempted, which not even the largest charity can admit to be employed for religious or scientific purposes; your *Finance Committee* could no longer submit in silence to what must only be regarded as an unjust discrimination. It will rest with your Trustees to decide whether to continue payment, awaiting a more convenient time for the recovery at law of the sums paid: or, to summarily decline payment, leaving it with the Courts to determine if the Legislature or the Civic Assessors are the better judges if Horticulture is a "Science!" The General Statutes of the Commonwealth exempt from taxation

"The personal property of literary, benevolent, charitable, and scientific institutions incorporated within this Commonwealth, and the real estate belonging to such institutions, occupied by them or their officers for the purposes for which they were incorporated."

Under that provision, property amounting to Two Millions, Eight Thousand and Four Hundred Dollars ($2,008,400): contributes nothing to educate our children, to enforce our laws, to defend our lives,—to protect itself! Of all the Associations

* *V.-P.* Hadwen.

incorporated to "advance science," the WORCESTER COUNTY HORTICULTURAL SOCIETY only bears its share of the common burden. "Millions for defence, but not a cent for tribute!" was the cry of our fathers. Shall we tamely submit, longer, to such wanton injustice?

The Statutes,—which exempt from Taxation—"houses of religious worship,"—strive, in a feeble measure, to protect the tax-paying Issachar, by the saving clause that

"Portions of such houses appropriated for purposes other than religious worship, shall be taxed at the value thereof to the owners of the houses."

How many dollars, think you, will the City Treasury derive from that source? which, were the spirit of the law observed, should be so rich in returns? You may imagine that no "portions of such houses" are mis-"appropriated." Possibly, your innocence is justified. And yet it sounds somewhat strange, reading over the programme of a course of Lectures announced to be delivered in the "Chapel of the ——— Church," on the "Lyric Poets in their relation to Music." Goethe, and Burns; Scott, and Tennyson; Longfellow, and Moore; join hands on this new *Walpurgis Nacht;* but the Witches-Dance is transferred to the House of God! For the sum of One Dollar and fifty cents ($1.50), the chronic hunger after righteousness might be harmoniously appeased "during the season:" or, if you only craved the waters of life at a "single admission," thirty-five cents would be required, as you assuaged your thirst to the pious tune of

"Believe me, if all those endearing young charms."

Was there ever aught like it, since that avatar of the new dispensation when, after some extreme *pirouette* of Ellsler, Margaret hugged Ralph Waldo in her ecstasy, exclaiming:—This, indeed, is Poetry! the Sage replying, in calm self-poise, No, Margaret! it is Religion!

Impose "burdens grievous to be borne" upon Horticulture, for its deficiencies as a "Science," But "temper the wind to the shorn lambs" of a chapel wherein, for gain, Little's songs are accompanied

"To the Dorian mood of flutes and soft recorders!"

The taxation of other people to maintain a worship that we are

too penurious to support, out of our own pockets, comes nigher to making "bricks without straw" than any invention of late centuries. God must be hugely pleased with such vicarious generosity; and find Divine satisfaction in awarding an eternity of bliss to those who are so lavish of substance—*not their own!*

President Wilder has announced that, if health and life are spared to him, the Eighteenth (18th) Session of the American Pomological Society, A. D. 1881, will be convoked in Boston. In his Annual Report, A. D. 1879, your Secretary, anticipating such a contingency, "suggested for your seasonable consideration, whether it might not be courteous and eminently proper for this Society, to ask that one day be set apart for a visit to Worcester." Reflection, and consultation with many of your number, have satisfied me of the wisdom of that advice. True,—we can not show our visitors such princely estates as those of Messrs. Hayes and Hunnewell. But we have land and water scapes that God made, and man, to his credit! has not marred. Here is a Hall, all our own, wherein to receive them; and a Library, comprising the hoarded wisdom of ages,—yet valued more as the priceless means to an inestimable end. And—beyond and before aught else, a membership of men and women, enthusiastic and intelligent; encouraged by what they have already accomplished, yet regarding the sum of their achievements as but an incentive to further activity and research. Were it the bearing year,—so called,—it might be possible to prepare a worthy display of Apples. Town shows, the Weekly Exhibitions of our Society, with the miscellaneous agglomeration at the Rink,—each and all confirm a life-long faith that, in the growth of this chiefest of all fruits; palatable in Summer as the *Astrachan* or *Worcester Spy;* rivalling the Peach, in Autumn, as the *Gravenstein;* or crowning the joys of Thanksgiving, and "Love's Young Dream," at Sewing-Bee and Sleigh-Ride, with the *Hubbardston Nonesuch* or *Mother;* Worcester County has no competitors to dread. And, supplementing the whole, we can proffer a hospitality for which Worcester was always credited: that has never failed, in the history of the town; and which needs but such an occasion to prove that the hearts and hands of the sons are as warm and open as those of the sires.

The acceptance of an invitation from us would impose responsibilities for which it might be well to prepare in advance, by the appointment of a competent Committee, and the delegation to it of adequate and suitable authority.

Had your Secretary reflected for a moment, upon the nature of the duty which he imposed upon himself; a duty required by no rule, and which deference to unbroken custom did not then exact; it is doubtful if this series of Annual Reports would have been commenced. Public favor has kindly welcomed them, and your direct partiality has stamped its seal of approval. Perhaps as a record of development from year to year; a review of the steady progress that has been made in "advancing the science and encouraging and improving the practice of Horticulture;" the labor spent in their preparation was not in vain. Nor—even as an incentive to continued and further effort toward the ultimate attainment of perfection;—that final goal of horticultural saints;—may they be esteemed wholly fruitless. Nevertheless,—their entire scope and tendency could not be thus restricted: and therefore it is that your Secretary feels that he would have shrunk in dismay from the task, had he anticipated into what dark and shadowy paths it would, all too frequently, constrain his reluctant steps. For it has not been his good fortune, always, to treat of new flowers or fruit; to describe some rare acquisition; or to comment upon those strange or eccentric forms whereby Nature consummates her processes and evolves new species, or genera. But, almost invariably at the close of the year, to call the roll of our lessening associates, following them into the deepening gloom, with only the melancholy satisfaction of embalming their memory and rehearsing their virtues. Writing a necrology is but a dreary task, however so much it may be a labor of love. These portraits upon our walls are inaudible voices from the grave. But who was there, if not your *Secretary* who knew them from his childhood, to speak to you of Green and Chase; of Champney and Draper; of Colton and Ripley; of Jaques and Paine; of Lincoln (Levi), Thomas; or either Earle! And now that the arrow of the insatiate archer has struck home, once more, shall the voice of

fraternal affection be hushed in this Hall, that witnesses our Annual Meeting for the first time since the death of DANIEL WALDO LINCOLN!

Justly eulogized as he was at the mortuary gatherings of Municipal, or Business Corporations, which had latterly almost monopolized his energetic devotion; and perhaps too exclusively claimed, at the recent Fair of the New England Agricultural Society; I should be false, alike to his memory and to myself, were I not to assert, in this presence, that, above all, he was a Horticulturist! From the time, almost a half-century ago, when, a mere lad, I was trusted to pass the buds with which he was perpetuating all choicer varieties of the Peach:—until, but a few weeks since, he was inquiring with deep interest about the *Azalea Mollis*, just then blooming for the first time in Elm Park. Throughout that entire period,—of Fifty years in duration,—his tastes inclined him, as undeviatingly as the needle points to the pole, to our favorite pursuit. Diverted from it, as he necessarily was, of later years, by engrossing occupations, he was never insensible to the attractions of those rarer flowers or fruits, whereof the enterprise or skill of man has, recently, been so prolific. An inherited responsibility was nobly upheld; and no citizen of Worcester, qualified to judge, could tell from the appearance of the homestead, that there had been a death or a succession. If an eye, more than ordinarily observant, could detect any change, it would have been in an obvious tendency to the consolidation of forms and varieties in harmony with synchronous fashion.

Mr. Lincoln's taste for Horticulture was innate. And his associations, from maturer youth, conduced to the development of his natural inclinations. Sitting at the feet of *Dr.* Oliver Fiske,—that Gamaliel of our local Floriculture and Pomology,—he early became familiar with the traditions of the fathers; and acquired the practical knowledge which that kindly old man was happy to impart to those for whom he took a fancy. Of *Dr.* Fiske it was, that *William Lincoln* thus wrote in his History of Worcester:

"From this period," (A. D. 1821), "an increasing defect in the sense of hearing, induced him to retire from busy life, and devote him-

self to the pursuits of horticulture and agriculture, those employments, in his own graceful language, 'the best substitute to our progenitors for their loss of Paradise, and the best solace to their posterity for the evils they entailed.' The results of that taste and skill in his favorite occupations, early imbibed, ardently cherished, and successfully cultivated, have been freely and frequently communicated to the public in many essays, useful and practical in matter, and singularly elegant in manner."

Of how many varieties of Apples, Peaches, and Pears, accumulated by the good *Doctor*, do we owe our knowledge to that little Nursery, formed with his own hands by Mr. Lincoln upon the ground now covered by the estates of Joseph Mason, Esq., and Ex-Gov. Bullock! The writer well recollects what pains he took to gather peach stones; requesting people to save them, and going in person to collect any considerable quantity of which he was advised. His stock, budded from sound trees of the red and luscious Rareripe, the early and late Melacoton; and widely disseminated from the perfect trust reposed in his integrity, did much to preserve these varieties—than which none have since been found superior,—in local cultivation. Were the same method adopted now;—would it be too much to hope for like or equal results? With pits from sound fruit, and buds from healthy stocks,—what should prevent the County of Worcester from enjoying the Peach, once more, in superabundance? Once in a generation, mayhap, occurs a frost to which the very trees will succumb. Such was the case A. D. 1860, but that extremity of cold was equally fatal to the Cherry and Quince. With health, no fruit-tree is hardier than the Peach: and with unhealthy trees Mr. Lincoln, knowingly, had nothing to do.

Few men have lived, in this community, more sternly guided by an inflexible sense of duty. Once convinced of the right thing to do, in an emergency, and he never shrank from doing it,—no matter at what personal inconvenience or loss. Twice in his life—all too short for the public good,—was this markedly the case. As Representative to the General Court, he voted to equip the Cushing Regiment for the Mexican War: knowing right well that, for so voting, he would forfeit the suffrages of his constituents and be denied the customary re-election. Twenty years later,—he maintained the indefeasible right of

the people to the uninterrupted use of Main Street, against corporate usurpation and a singular individual arrogance that had hitherto brooked no opposition to its selfish will. His sturdy independence cost him the Mayoralty:—possibly as great a loss to the city as to himself. For the services that were valueless to the public were eagerly sought by the great Railway Corporation, in whose active direction he continued through life. Most truly did the stone which the builders rejected become the head of the corner! The future historian of Worcester will award him that justice heretofore withheld; and, vindicating his memory from the charge of disloyalty, too effectually used to his prejudice by his cunning opponents, as a cloak to their own selfish purposes; record the fact that, all this time, he held the written thanks of John A. Andrew for his zealous co-operation; and that, so long as he was *Mayor* of Worcester, that great Patriot and Statesman reposed the chiefest faith and reliance upon him of all the Municipal Officers of Massachusetts.

More especially was Mr. Lincoln thorough in what he did, or undertook. He seemed fully possessed of the axiom;—if you are indifferent, send! if you would succeed, go? Whatsoever was to be done, he did himself, if possible; and what "his hand found to do he did it with his might." In Horticulture this enured to his benefit; as it will profit all who follow the example. For, in those early days, when Horticultural Societies were in their infancy, if formed at all; and the great European Nurseries had gained but narrow repute; it depended upon the man himself whether diligence and skill should merit and obtain appreciation. That Mr. Lincoln was thus successful, where many failed, needs not to be stated here. But unexpected testimony to that effect was borne from abroad, by Mr. Wood, of West Newton (so pleasantly known to you), who mentioned to your Secretary, during the late New England Fair, his coming to Worcester with his father, some forty-five years ago, to procure trees from a nursery that could be trusted. The location which he pointed out was that original one, about the intersection of Elm *Street* with Linden, and which has been heretofore indicated.

Of his devotion to this Society, what could be more eloquent

than our simple Records? In which from the commencement, until the doleful close by that festal river, there is scarcely a page whereon his name is not obvious as of one suggesting new themes and methods of improvement. Succeeding his *Uncle* William, he became a Trustee, A. D. 1841, and thenceforward, to the day of his death, was at your beck and call in whatsoever position you might elect to make use of him. As Chairman of Committees,—whether of Nomenclature; or as a judge of the rarer varieties of flower or fruit; as Vice-President, and subsequently President, until his voluntary retirement; and for the entire Forty years, either by election or *ex-officio* a Trustee; he was ever ready to render service where you placed him. As Chairman of a Special Committee, he reported, January 29th, A. D. 1862, in favor of the removal of the Library of the Society to this Hall; a recommendation which you wisely sanctioned. He was the first to advise the inception of that system of Weekly Meetings, for the discussion of Horticultural topics, which did so much to arouse our own Members: an example that, lately imitated by the Massachusetts Horticultural Society, has been equally vivifying to that venerable body. Apt of perception and prompt to act, his counsels were ever sagacious. Were other proof lacking,—this very Hall, which he was swift to suggest and in whose erection, as one of your Committee, he took such interest, would furnish ample evidence.

Of the direct services to the Horticulture of Worcester County, rendered by Mr. Lincoln, there is not space left for their recital. I have already spoken of his opportunities to obtain and preserve varieties collected by *Dr.* Fiske. When that Garden and Orchard was broken up, Mr. Lincoln was careful to get all that was worth having: thereby doubtless perpetuating much that must have been lost without such diligence and knowledge. He was not accustomed, in his latter years, to pride himself upon a somewhat virulent attack of the *Morus Multicaulis* fever. But as one who was permitted, by especial favor, to feed his silk-worms, your Secretary may be suffered to remark that the disease ran its course, the patient fully recovering; while worms, mulberry-trees, and prospective

profits, simultaneously vanished as a rapidly dissolving mirage. Petroleum, nor silver, could be more delusive.

Hearing of that gorgeous novelty from the Amazon—the *Victoria Regia*,—he visited Philadelphia and, obtaining a young plant, with some seeds also, was fortunate in developing it to its ultimate perfection. Of this enterprise, our learned associate remarked in the *Gardener's Monthly* for September ult., that "Mr. Lincoln was, we believe, the next after Mr. Caleb Cope to undertake the culture of the Victoria Lily in this country." Few, of this present audience, were privileged to see that Lily, as then exhibited. Though procured and cultivated at considerable pecuniary loss; and at much greater personal inconvenience; it was yet remunerative to him from the admiration which it aroused and from the new interest that it appeared to impart to Horticulture itself. In whatsoever would dignify that, he counted nothing amiss.

But, while never given to boasting, he yet did take a modest share of credit to himself for the introduction in this vicinity, of the Northumberland Fillbasket *Raspberry;* and of the Beurre d'Anjou, and Washington, *Pears*. Speedily winning favor, when first tested, they have not been surpassed as yet by any of their newer and pretentious rivals. Mr. Lincoln's thoroughness has been mentioned. Perhaps it may be as appropriate here, as elsewhere, to state that, finding errors apt to happen from the confusion of tongues, he constrained himself to the mastery of the French language; long after his collegiate instruction had become rusty; that he might be able to correspond in their vernacular with *MM.* André Leroy *et Fils*. Even then he could not escape imposition;—not necessarily designed on the part of his correspondents. For just what and how many of the varieties, wherewith our Gardens and Orchards have been enriched, we who survive have been indebted to him for their introduction, can never be known. But it is perhaps not too much to assert that, if it had not been for his intervention, our local landscape would have possessed fewer charms,—our Gardens and Orchards far less attractions. Since he esteemed at its true worth all that was tasteful and lovely. Not restricting himself to the growth of Fruit, however palatable: but seeking out and

collecting, for wider dissemination, the flora of remote regions, that others might share in his own enjoyment of natural beauty.

And so he died! under that First sun of July which, by a strange coincidence, had greeted the nativity of three* of his nearest kin; and shed its fatal rays upon the dying hours of yet another† than himself!

"The words of the Preacher, the son of David, king in Jerusalem:

What profit hath a man of all his labour, which he taketh under the sun?

I made me great works; I builded me houses; I planted me vineyards.

I made me gardens and orchards, and I planted trees in them of all kind of fruits.

Then I looked on all the works that my hands had wrought, and on the labour that I had laboured to do: and, behold, all was vanity and vexation of spirit. * * *

Wherefore I perceive that there is nothing better than that a man should rejoice in his own works; for that is his portion; for who shall bring him to see what shall be after him?"

All which is respectfully submitted, by

EDWARD WINSLOW LINCOLN,

Secretary.

Horticultural Hall,

Worcester, Mass., Nov. 3, A. D. 1880.

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* A daughter; a sister; a sister-in-law. † A sister-in-law.

TRANSACTIONS

OF THE

WORCESTER COUNTY

HORTICULTURAL SOCIETY

FOR THE YEAR, 1881.

COMPRISING ESSAYS AND REMARKS,

AT STATED WEEKLY MEETINGS;

ALSO, THE

ANNUAL REPORTS OF THE LIBRARIAN,

AND OF THE

SECRETARY.

Worcester:
PRESS OF CHARLES HAMILTON,
311 Main Street.
1881.

NOTE.

The Committee on Publication insert in this volume of "Transactions" all of the Essays which they were enabled to procure. It is to be regretted that even abstracts were impossible of attainment, in some instances, which would do justice to the themes as treated. Such was notably the case with the remarks of Secretary John E. Russell, on the Flora of Central America.

E. W. L.

Hall of Flora,
December, A. D. 1881.

INDEX.

PAGE.

Chemistry Something but not Everything in Agriculture, - 5

Some Experience in the Culture of Hardy Roses, - - 8

The Cultivation of Small Fruits, - - - - 18

House Plants for Winter, - - - - - - - 29

Æsthetics of Earth Culture, - - - - - - 38

Report of the Librarian, - - - - - - 51

Report of the Secretary, - - - 53

WORCESTER COUNTY

HORTICULTURAL SOCIETY.

A. D. 1881.

Chemistry Something but not Everything in Agriculture.

By Professor Charles O. Thompson.

Before the Worcester County Horticultural Society, January 13, *A. D.* 1881.

[abstract.]

Chemistry has done great service in the world and has made more valuable contributions to the happiness of man than any other science. The improvements in scientific metallurgy alone give chemistry a very high place. When confining itself to the laws of dead matter, this science works accurately and usefully; but our knowledge of the processes of life is so limited and inexact that any attempt to guide any of the practical arts that depend upon the vital forces by the dicta of a physical science *alone* must be vain.

Whenever science comprehends the principles of any set of phenomena, a trustworthy prediction of results can be given in any case; as, for instance, the effect of carbon turning iron into a steel is so well known that the quality of the steel can be predicted from the percentage of carbon in it; a chemist can speak with certainty of many similar phenomena in the treatment of metals; but when he is asked to plant and fertilize corn so as to insure a crop he hesitates, because unknown and unmanageable conditions enter into the problem.

Farmers have put too much reliance on chemical fertilizers, and have found out that chemistry alone is an uncertain guide in practical agriculture. In the reaction from this conclusion there

is danger that the advantage of chemistry in agriculture will be under-estimated.

Dr. Playfair's translation of Liebig's great and useful work—Chemistry in its Relations to Agriculture and Physiology—awakened many hopes that were destined to disappointment. In this country, the New York Tribune following the suggestions of Liebig's book gave too much countenance in its invaluable agricultural department to the notion that a farmer can tell by a chemical analysis of his soil just how to treat his crops.

At this time, seventy years since the era of Liebig's Chemistry, all opinions seem to agree that chemistry is a valuable auxiliary to agriculture, but cannot claim to be its leader. As one wise man called theology "sanctified common sense" so good agriculture is instructed common sense. But chemistry has done some service to agriculture and will yet do much more. The nature of fertilizers has been effectively investigated, and more recently that of feeding stuffs—the latter being the theme of a valuable book just published by Dr. Armsby of the Connecticut Agricultural Station at New Haven.

As to soil, the physical conditions are quite as important as the chemical, and, for this reason, the chemical analysis of soils taken by itself fails of being a sure guide to the proper treatment of soils. Take Peat as an illustration: at first, the fact that it consists largely of carbon was taken as proof of its value as a fertilizer. It was applied fresh from the pit, with disastrous results, and was of course abandoned as worthless. The reaction was as unreasonable as the first position; for a close study of the physical properties of this substance shows a vast capacity for storing water, and when it is freed from deleterious acids it is very useful on leachy soils as a reservoir for water. A proof of this may be seen on a sharp slope in the Free Institute grounds, where I have succeeded in producing a good durable turf on a bank of hard pan and gravel by laying down first two inches of dry peat, then two inches of compost, harrowing in the grass seed and rolling. It is specially noteworthy that there has been no wash from the foot of the slope. The grass close up to the limit of the fertilized slope seems not to receive the least encouragement from it.

Again, in the matter of nitrogen compounds Dr. Armsby has shown that the soil does absorb free nitrogen from the air and prepare it for plant food; *i. e.* the soil acts first physically by absorbing the nitrogen into its pores, and then chemically by putting this absorbed nitrogen in shape for the nutriment of the plant. This explains the importance of keeping all soils light and porous by frequent stirring.

The great danger in the use of chemical fertilizers lies in our forgetting that these are *stimulants* more than fertilizers, and the exclusive use of them will soon make an inevitable and natural limit. *Used with natural fertilizers*, which maintain the supply of humus and help keep the soil porous as well as contribute to its fertility, chemical fertilizers are very helpful.

But whatever may be said for or against the practical application of chemistry to agriculture, two great points can be made in its favor as a disciplinary study in the training of men who are to be farmers: 1st. It cultivates the faculties which the farmer needs more directly and efficiently than any other science; viz. close and accurate observation, sound classification, correct reasoning from observation and a devout recognition of the binding force of natural laws.

2d. Chemistry is the only science that has at the present moment any chance at all of solving the perplexing but fascinating problem of the connection between life and matter. How, where and when the atoms of dead matter slip from the control of the ordinary molecular forces and group themselves under the higher generalship of the vital forces, are questions which chemistry will one day solve. They are questions of the highest dignity and importance, and an observant gardener or farmer is likely to study them to the best advantage. He has this encouragement, that, so far as we now know, plants hold the secret that we should all be so glad to get.

Some Experience in the Culture of Hardy Roses.

By William H. Spooner, of Boston.

Read before the Worcester County Horticultural Society, January 27, A. D. 1881.

The remarks on the subject of the Rose and its culture, and the suggestions which I shall offer you, have been gleaned from experience derived from personal observation in planting, tending, nourishing and comparing, and the results of such labor and attention. There is probably no plant so popular or so universally admired as the Rose, nor one of easier culture, and in none have greater improvements been made in beauty and variety within the last fifteen or twenty years. We frequently hear it said that the climate and soil of England are better adapted to the Rose than our own; undoubtedly her humid atmosphere and less scorching suns are an advantage in favor of the production of exhibition flowers.

But when we look at France with her lighter soil and brighter sun, and see the immense product of her Rose farms, particularly in the south, where such quantities are grown for commerce in the famous Lubin district, what may we not expect for our own country, even with its bright sun and dryer atmosphere? Under these conditions, humidity must be obtained by artificial means, and our most accomplished cultivators are rapidly mastering the art. If our warmer sun is a disadvantage, still it makes the season longer, and we saw as fine, or perhaps finer, displays of roses last season in August, as in June; I think the time is not far distant when a rose show of some kind can be made every month in the year.

It is generally supposed that to attain even a moderate measure of success in the Rose garden, all advantages of soil, scientific appliances, etc., are essential, but the amateur will find very satisfactory results, even when these conditions are not carried to great perfection.

The soil of my garden is not particularly adapted for the growth of Roses, being a light loam with a gravelly sub-soil, yet from this apparently uncongenial source, we succeed in growing a great many very good roses. I am not an advocate of the

deeply trenched or sub-soiling system in the preparation of the ground, considering it entirely unnecessary. One of the most successful Rose growers in the vicinity of Boston has improved a poor sandy soil, and adapted it for this purpose by spreading a liberal dressing of a kind of marl or clay found in most sand banks in layers, and by allowing the action of the frost upon it, it was then readily worked and proved just the requisite addition.

My system of planting was very simple at the outset, the land being already in a good state of cultivation. First, preparing myself with a well rotted compost heap of horse manure, the space assigned for the plants was covered with a portion of the compost, spread broadcast, and then thoroughly ploughed in. I may mention here that I have at other times made use of hen manure mixed with about one-third soil, and consider it a good fertilizer for the rose. The ground was then laid out in rows three feet apart, and the same distance observed between the plants, the holes for their reception were prepared by throwing out the soil to the depth of one spade from each, then throwing in two or three forks full of manure thoroughly incorporating it with the soil to the depth of the spade, and then all was ready for the plants.

My plants are all the so-called dwarfs, worked low upon the Manetti stock, which I prefer to the Prince's or Seedling Brier, as it seems better adapted to my light soil. I judge the latter variety may be better suited to a stronger or clayey soil; at any rate, all the plants I had worked upon this stock have died. My plants were imported and not received until about December 10th after the ground was closed, so that I was obliged to keep them in snug winter quarters, bedding them carefully into a frame, protecting them very closely with leaves, and covering the frame with boards. They came out in splendid condition in the Spring, and were planted with hardly an exception to successful growth; which result has led me to prefer the Spring for planting in our uncertain climate, and I have continued to make small experiments of the same kind yearly since my first venture. Having cut back the plant to two or three buds, the stock should be planted with the collar, which is the intersection of the bud with the stock, about two inches under the surface, and the soil pressed very firmly about it; the latter point I consider of the first importance, in fact it is one of the principal keys to success in Rose culture in Spring planting. Through the Summer I apply guano occasionally to the surface in the proportion of a handful or two to each plant, sometimes in a dry state, sometimes in water; and near the flowering season, especially in June when they are in a vigorous state of growth and bloom. Sulphate of Ammonia has

been recommended. I do not feel fully certain of benefit from the application of the latter, having tried it but one year. I use frequently in Summer, a top dressing of Brewers' spent hops strewn broadcast, not digging it in; it helps to keep down weeds and has many advantages. The Rose in a healthful growing state is a great absorber of water, and the free use of the hose, morning and evening, has been my most reliable assistant in promoting their excellence, and in freeing the plants from insects. Every fluttering leaf of the plants seems to rejoice, as the cool water showers down upon them, and the clean fresh foliage greatly enhances the beauty of the blossoms which it surrounds. But insects are ready to invade every domain of horticulture, and are especially destructive to the perfection of the Queen of Flowers; some of them may be overcome by water, but where the quantity essential for this purpose is not easily accessible, a dilution of powdered Hellebore, in proportion of a spoonful to two gallons of water, applied with a syringe, (it can also be applied dry by using a sulphur bellows, when the dew is on the leaf), will often be found useful, particularly for the extermination of the slug, a troublesome and damaging insect. But as regards the Rose bug or Rose beetle, I am in despair! The only remedy for this persistent plague that I have found has been the continuous application of the thumb and forefinger, and that with some severity!

It may be urged by some that the budded Rose has entailed upon it the disadvantage of the sucker, and its endless care, but actual experience proves this to be very slight. It is presumed that a lover of the Rose is with his pets as often as possible, and these persistent thieves are easily detected and quickly destroyed. I cannot agree with those who claim that the maiden bloom is the best effort with the budded rose, as I am now growing plants on the Manetti stock which have been out eight years, and are producing as fine blooms as ever. The amateur wants results in the shortest time, and therefore must take the budded plant; if sunk deeply enough it soon becomes fixed on its own roots. Few of us can hope to rival the magnificent blooms of "Monsieur Paul Neron" or the size and beauty of "Horace Vernet" and "Charles Lefebvre," which have secured the prize cups at recent rose exhibitions, but I am sure that the Manetti stock will give us an approximation to these high standards.

My practice is to heap up the earth about the plant to the depth of six or eight inches in the Autumn, then if they are killed to the ground line, no serious harm is likely to occur to the plants; I then scatter manure about them freely to prevent the ground thawing in the Winter.

It is not my practice to prune my plants in the Autumn, except of such kinds as make an excessive growth; these I cut back in a measure to prevent their being beaten or broken by the wind; in the Spring the plants are pruned thoroughly, the moderate growers down to two or three eyes, and the crowded shoots taken out; the very robust-growing kinds should be left longer, about eight or nine inches in length, the smaller shoots to four or five inches. Endeavor to keep the plant in good shape in trimming, leaving all parts exposed as much as possible to the influence of the sun, and the judgment of the operator must be the guide in producing this effect. Moss roses require a similar treatment in pruning, as they are generally short jointed, moderate growers, and the eyes have a particularly dormant or almost dead appearance, and should be trimmed back to within two or three inches of the previous year's wood; vigorous kinds like Crested, Laneii, Baron de Wassenaer, can be left longer. It is often desirable to prolong the blooming season of the plants, which can be accomplished by trimming a portion ten days or a fortnight after the first pruning. This is particularly applicable to the Moss, which has a naturally brief season, unless it is prolonged by accelerating or retarding the blooms by this divided method of pruning. It might be well to mention as an exception the Persian Yellow, which should be pruned every other year, and blooms only on each intervening year, for although without trimming at all, we could get some blooms every year, the plant would become unhealthy and die; so that to overcome this, and preserve the Rose, we must on the intervening season, sacrifice its beauty to the knife. By having two plants with this system of pruning, we can secure one for blooming each year. All the prunings from the Rose and other sources in the Spring are gathered and burned and the ashes spread about the plants as a fertilizer.

There is evidently a great difference in the constitution of hardy hybrid Roses, as has been proved by success or failure under the varying influences of climate, soil or stock, and as some results of my individual experience may prove suggestive, I append a list of a few which have been successful under my system of culture.

Duke of Edinburgh, one of the strongest and most hardy; color, brilliant scarlet crimson, very fine; Monsieur Paul Neron, vigorous and hardy, pale rose, immensely large: Pierre Notting, very hardy, good habit, strong grower, blackish crimson, beautiful form, but alas! how seldom do we find a fully developed and perfect flower! A bright sun apparently scorches the petals in the bud. As a notable exception to this fatal defect, we can

mention twelve most perfect flowers of this variety in size, form and color, exhibited by Mr. Gray at the rose show of the Massachusetts Horticultural Society one year ago, securing the prize cup; but this was the only time in five or six years that he had succeeded in obtaining perfect blooms.

Monsieur Boncenne, a plant of good habits, velvety crimson in color; very hardy and vigorous, the best of its class with me.

Victor Verdier, always good and reliable, brilliant rose.

Madame Boll, perfectly hardy and vigorous, free bloomer and early; flower not the most perfect in form or color, which is rosy peach.

Doctor Andry, hardy, vigorous and free bloomer, deep bright red.

Marie Beauman, one of the very best; moderately vigorous, quite hardy, with large and perfect flowers, very smooth, bright carmine.

Countess of Oxford, hardy, vigorous, fine large flowers, bright carmine red.

Lord Clyde, remarkably strong grower, hardy, a very good rose, crimson and purple shaded.

Elisa Boelle, moderately vigorous, hardy; with a very delicate white bloom, shading to flesh color.

Madame Rivers, a fine rose, moderately vigorous and hardy; clear flesh color, good form.

Miss Hassard, vigorous, hardy, delicate peach color; sweet and a free bloomer.

Emily Laxton, vigorous, of a climbing tendency, hardy and very desirable.

Charles Lefebvre, a very strong and hardy rose, flower large and beautifully formed, rich velvety crimson.

Alfred Colomb, this superb rose is quite hardy and vigorous, its brilliant crimson flowers are unrivalled in color, and in form a very effective globular.

Sir Garnet Wolseley, a thick bushy plant, rather short jointed, moderately vigorous and hardy; its large vermillion flowers and profuse bloom are very attractive.

Jules Margottin, of vigorous habit, very hardy and still one of the best; flowers bright cherry color.

Thomas Mills, very hardy, well formed plant of great vigor of growth, very prolific bloomer, flowers very large, color bright rosy crimson, one of the best with me.

John Hopper, an old favorite, hardy and very fine bloomer, rosy crimson and lilac rose color.

Madame Vidot, moderately vigorous, hardy, flower beautiful and perfect in form, palest flesh shaded rose color.

Madame Gabriel Luizet, vigorous, hardy, free bloomer and delicate satin rose color, and I think may prove one of the best. Sent out in 1878.

Abel Carrier, moderately vigorous, hardy, beautiful dark velvety crimson flower.

Coquette de Blanche, is a white rose, and a truly perpetual bloomer until late in the Autumn ; a remarkably vigorous grower and has proved hardy with me until last Winter, when it was killed to the ground.

Madame Georges Schwartz, vigorous and hardy, glossy rose.

Mabel Morrison, good grower, sport from Baronesse de Rothschild, pure white, not very double.

Dupuy Jamin, vigorous grower, color very fine carmine crimson.

Madame Scipion Cochet, very vigorous in growth, color bright cherry red.

Senateur Vaisse, hardy, good grower, flowers large and full, color brilliant red.

Princess Louise Victoria, vigorous, of a climbing tendency, flowers rosy salmon pink.

Bessie Johnson, vigorous, of rather spreading growth, color blush white.

Triomphe de Caen, a strong grower, flowers brilliant scarlet.

Madame Victor Verdier, growth vigorous, large flower, bright rosy crimson.

Beauty of Waltham, vigorous grower, flowers finely formed, cupped, color cherry crimson.

Fisher Holmes, of strong, spreading growth, flowers very large and double, color reddish scarlet.

Jean Gonjon, vigorous grower, flowers large, beautiful clear red.

Souvenir de Chs. Montault, good grower, free flowering, fragrant, color purple and crimson.

I will now name a few varieties that have not proved hardy or have been weak in growth, and less satisfactory in general results in my experience:

Madame Baronesse de Rothschild is usually winter-killed nearly to the ground, and never a vigorous grower. We cannot however, accord too high praise to the color of this rose, and with some growers it has proved successful, though always late in starting.

Madame Lacharme, rather tender with me, doomed especially to the damaging attacks of the rose bug, and seldom giving me a flower of any approach to perfection, though President Hayes of the Massachusetts Horticultural Society, at the Rose Exhibition

last year, was awarded a silver cup for a group of three roses, one of which was a most exquisite specimen of this variety, which I have never seen equalled in size or color, but this was an exceptional success.

Louis Van Houtte, almost always killed; I only saved it one year.

Cranston's Crimson Bedder, seems hardy enough, but a very poor grower.

Mdlle. Eugenie Verdier, weak grower, although a beautiful rose.

LaFrance, almost invariably killed.

Mdlle. Bonnaire, very beautiful, free in flower, but a poor grower.

Prince Camille de Rohan, not very hardy. I know this is not the general experience, but I have lost all my plants. It is dark maroon crimson in color.

Mdlle. Marie Rady, Viscount Vigier, Andre Dunand, Captain Christy, have proved tender.

We have now what bid fair to lead into a fine class of Perpetual climbing Roses for which we are indebted to the English growers; such kinds as Climbing Jules Margotin, Climbing Chs. Lefebvre, Climbing Victor Verdier and Madame Victor Verdier are destined to prove acquisitions.

We anticipate from the group of new Roses sent out in 1880 some desirable varieties, judging from the colored representations which we have seen.

They are:—Jules Chretien (by Schwartz), fine dark color.

Madame Oswald de Kerchove (Schwartz), of medium size, white, shading to coppery yellow.

Masterpiece (by Paul), seedling from Beauty of Waltham.

Pride of Waltham (by Paul), delicate flesh color in the way of Countess of Oxford.

Lady Sheffield (by Postons), type of Marie Beauman.

Red Gauntlet (by Postons), bright scarlet crimson.

Princess Marie Dolgorouky (by Gonod), deep rich satin rose, seedling from Anna de Diesbach and the new variety. Mrs. Jewitt (by Cranston) to be sent out next Spring, "brilliant glowing crimson, shaded with lake, flowers very large and globular, very fragrant, of robust habit."

Mary Pochin (by Rev. Mr. Pochin), to be sent out next Autumn. Among roses of recent introduction which promise well, and are likely to prove desirable are: "Charles Darwin," brownish crimson; "Marquis of Salisbury," rose shaded crimson; "Harrison Bien," velvety crimson and scarlet; "Duchess of Bedford," dazzling light scarlet crimson; "Countess of Rosebery,"

brilliant carmine rose; "Julius Finger," salmon pink; "Mrs. Laxton," bright rosy crimson; "Earl of Beaconsfield," light cherry carmine; "Madame Ducher," rose, shaded with purple; "Dr. Sewell," brilliant crimson scarlet, shaded purple.

In concluding this part of my subject I shall only allude briefly to the cultivation of Hybrids in pots, a branch of the business which is assuming large proportions with some of the commercial florists of the principal cities; New York and Boston will undoubtedly produce more than five hundred thousand blooms under glass this season, New York furnishing the larger proportion of the number, and Boston from eighty to one hundred thousand, and what is somewhat singular is the fact that fully nine-tenths of this large number are from the old variety, General Jacqueminot, which is not what under the modern system of culture would be considered a first class exhibition rose, as it is not very double; but is just what the florist wants, a rose remarkably prolific in flower, very fragrant, of very striking color at full bud or when half expanded.

THE MOSS ROSE.

Turning now to the fairest of the Rose family, we are reminded of the poetic allegory which accounts for its added beauty by supposing an angel to have found repose beneath its branches, and wishing to bestow some gift in recompense, but scarcely able to devise any addition to its charms:—

> "The Angel paused in silent thought:—
> What grace was there the flower had not?—
> Twas but a moment:—o'er the Rose
> A veil of Moss the Angel throws;
> And, robed in Nature's simplest weed,
> Could there a flower that Rose exceed?"

I must confess to a great love for this fascinating class, partly for the reason that my light, well enriched soil with its natural sub-soil drain of gravel tends to bring it to full perfection, and the delicate fragrance of the foliage is peculiar and unique. The ground should be prepared in the same way as for the hardy perpetuals with a larger application of manure, and I also apply a more liberal annual summer dressing during the blooming season. I have always found the Moss Rose more difficult to successfully transplant than any other, and it starts very slowly on its own roots.

Most of my Moss Roses are worked upon the Manetti stock, but the Common, I prefer on their own roots, the varieties Laneii and Celine do well in this way also.

The varieties that have proved best with me, are, Common or Old Moss, vigorous, free grower, color pale rose, fine double flower—the best of all.

Crested, next best, of vigorous growth, flowers very large and double, buds beautifully crested, color light rosy pink.

White Bath, a good grower, flower large and full, buds well massed, pure white.

Laneii, vigorous, upright grower and moderately free bloomer, color deep rose, round handsome bud.

Baronne de Wassenaër, color deep rose, perhaps the strongest grower of all; wood very dark and spiny, blooming in large clusters of buds, not as mossy as some other kinds.

Gracilis or Prolific, resembling the common, but with a longer bud, color deep pink, fine.

Celine, hardy, moderately vigorous, spreading, foliage dark colored, leaves rather small, a profuse bloomer, bud rather soft, not very double, color purple and crimson, pretty in bud; it would probably force well.

Perpetual White, moderately vigorous, color pure white, buds small and short stemmed, in rigid clusters of four to six buds, foliage a light pale green, leaves crisped. Not very hardy.

Reine Blanche and Gloire de Moussenses have not proved hardy with me.

The so-called perpetual Mosses seem to me a myth as moss roses; they may be perpetual but they possess very little moss, and the only variety that I have been able to save is Madame Morean, which is a perpetual free bloomer. Many successful growers recommend Madame Edouard Ory and Salet as the best.

My ideal type of the Moss Rose is that the stem should be of graceful, pendulous growth, crowned by at least two or more blossom stems, with a cluster of buds on each; the buds should be moderately large, tapering somewhat to a point and well mossed; the common moss seems to possess most of these requisites, which has led me to place it at the head of the list; another high in favor and very beautiful is Laneii, making an upright, stiffer growth with strong erect stems and rigid bud stems, bud globular, well mossed, but lacking the graceful pendulosity of the former.

The Common and Gracilis are well suited for layering in beds when grown on their own roots, as their growth is quite spreading. If the shoots are layered in the ordinary manner, they make fine plants in two seasons; the process is easy; first stripping the leaves from a portion of the stem to be layered, making a cut on the upper side about one inch below a bud, and half through the shoot, and one and a-half or two inches in

length, then twisting it slightly so as to bring the tip end of the stem upright or nearly so, and the tongue made by the cut pointing downward, draw the soil away so as to allow the burying of the shoot about three inches, place the shoot in the ground pegging it down with a forked stick to hold securely, draw the soil well about it and press firmly. This tongue will soon callous over and roots will be emitted from it. The work of layering should be done from the middle of July to about September 1st. Sometimes it is done in the Spring, but with less surety of success. The varieties Lancii and Celine propagate themselves rapidly, the latter stealing away in every direction unless checked. The former is a good grower and soon makes a thick cluster of plants and would almost answer for a hedge, growing very much like a raspberry and producing offsets in a similar manner.

In conclusion I must not forget to recommend the old-fashioned Sweetbriar, so much prized for the delicious fragrance of its foliage; and its light rose colored flowers although very single are not objectionable; it is a rank vigorous grower and very hardy, will take care of itself although appreciating cultivation.

If I have devoted too much of my space to descriptions, it must be borne in mind that the individual experience of success or failure with different varieties, and their characters, is what the masses, who have not the time or inclination for such labor, must depend upon: and if in this paper, I have succeeded in suggesting any thoughts to simplify the culture of the Rose, or furnished encouragement to any lover of it, I shall feel that my object has been accomplished.

The Cultivation of Small Fruits.

By Frank J. Kinney.

Read before the Worcester County Horticultural Society, Feb. 10, A. D. 1881.

Mr. President, Ladies and Gentlemen :—The subject for our discussion to-day is assuming such immense proportions, that it demands, that we as a Society shall disseminate only facts in relation to it, so I shall endeavor to speak of only what I know from experience, using no figures except those taken from my own books, or those of reliable friends ; and will preface my remarks by saying that I have found no "Royal Road" to success, but like all other business, to make a success of it, one requires first, ability to learn ; second, a long apprenticeship ; third, a love of the business ; fourth, courage and strength to combat with odds constantly. There is no calling that requires a more varied and thorough education, none where one will be more tempted to take the wrong road or where the right road is so full of pitfalls. I shall confine myself to varieties that have real merit, as I have found them, for the day would prove too short to mention all the varieties that have been considered worthy of a name.

The first fruit that will come to our table will be the strawberry, and it is conceded to be the best and most profitable of all and one of the easiest to grow. The lists of varieties are constantly changing : the hundreds of twenty-five years ago have dwindled down to one, the Wilson's Albany ; originated by John Wilson, of Albany, N. Y. If Hovey's Seedling, the first good native—originated by C. M. Hovey, of Boston, forty-five years ago—caused a slight breeze in the horticultural world, Wilson's Albany produced a whirlwind that carried the production of the strawberry into more families and States than all that had been done before. Rev. E. P. Roe in his elegant and instructive volume "Success With Small Fruits"—that our enterprising committee on the library have placed on our tables, and that ought to be read by every member—on page 45 says, "In spite, however, of all that is said and written annually against the Wilson, it still maintains its supremacy as *the* market berry."

And on page 96 he says, "In the present unenlightened condition of the public, one of the oldest strawberries on the lists—Wilson's Seedling—is more largely planted than all other kinds together. It is so enormously productive, it succeeds so well throughout the entire country, and is such an early berry that with the addition of its fine carrying qualities it promises to be the great market berry, for the next generation also." I discarded it eight years ago, as it required as good cultivation and soil with me as Jucunda, the Prince of Strawberries, and yielded less than half the profit. Still the facts remain as Mr. Roe has stated them.

The Charles Downing, originated by J. S. Downer, Fairview, Ky., took the place of Wilson's Albany on my grounds. I had some of the first plants sold and paid one dollar each for them, and never have regretted it. The people here in Worcester thought they didn't, and wouldn't like them, the first year or two, but now they rank second in number of quarts sold, and will soon rank first, unless there is some better and more productive new berry. Blossoms perfect.

The Crescent Seedling, originated by Wm. Parmelee, of New Haven, Conn., in 1870, although a comparatively new berry, is gaining many friends. It was not disseminated so rapidly as would have been if perfect fairness had governed its introduction; it was sent out two years as a perfect plant, but it is only partially so and requires some such early berry as the Wilson or Duchess set in every eighth or tenth row. It has done better with me on my early land than either Wilson or Charles Downing and the people who buy Wilson's because they are cheap, will buy Crescents, and we who grow strawberries for the market for a living, must grow what there is the most money in. The Crescent will bear the largest crop on light poor land of any berry I am acquainted with.

Kinney's Eclipse, originated by F. J. Kinney, Worcester, Mass., in 1873, is early like the above and is also the *longest* cropper I am acquainted with, and excepting the Lennig's White, is the best strawberry I have ever seen, and it is well known to many present that I try them all; it is an expensive amusement, but one might do worse. I have grown as large crops of the Eclipse, as of any berry except Jucunda, one of its parents, which it resembles inasmuch as it is particular in its choice of location and surroundings, and which it excels only in flavor. Blossoms nearly, but not quite, perfect.

The Jucunda is the best strawberry for me to grow that I have ever tried for profit or comfort, on soil suited to it, and am not sure but it would be best for me now to give up all other vari-

eties, as our worthy Secretary advised me to years ago, but I have not the courage to do it. It requires a strong, moist and rich soil; the plants are small and tender while young, but get very strong and robust as they advance in life, and a well-kept bed is a joy to behold after the first two or three months. Blossoms perfect.

The Sharpless has seemed inclined to do the fair thing thus far. It originated with J. K. Sharpless, Catawissa, Pa.; is a very large and good flavored berry, irregular in form at first and deserved the nickname it received last season, "Shapeless," but like Triomphe de Gand which it resembles in flavor the later berries are well formed, and they hold their size much better than the Triomphe, and like it do remarkably well in the greenhouse. They stood the drouth of the past season well, and withal did better than I expected them to do. Blossoms perfect.

The Glendale found by W. B. Storrs, growing wild in Glendale Cemetery, Akron, Ohio, in 1871, is one of the late strawberries that seems to have the elements of success in its make-up. I have adopted it and the Sharpless, and set them on a scale large enough last season to either condemn or establish them in my estimation as market berries on my grounds. Blossoms perfect.

I have a dozen newer strawberries on trial this season that will many, if not all of them, "be allowed leave to withdraw," as thousands of their predecessors have. I consider it the duty of every landholder to introduce new phases into the routine of their every-day life, and there is nothing that I have ever found, unless it was in watching the slow-feathering chicken to see how much of its dress would conform to the fashion of the standard of excellence, that interests every one of my family so much, as watching the growth of some new and untried fruit.

I set all strawberry plants eighteen inches apart in the rows and the rows four feet apart. Used to set two feet by four, but the white grubs have caused me to make this change. If I want to keep them in hills I allow two strong young plants to grow from each old one, and root them on each side of the old ones, and as near in rows as possible, keeping off all other runners. If I want to raise matted rows I layer all the early young plants lengthwise of the rows so I can cultivate between the rows as long as possible, stirring the surface soil only. I cultivate, and hoe, to kill weeds, and not plants and corn.

The plants will usually take all the land by the middle or last of September. I mean to have my land in good condition to grow corn, and be ready to set my plants just as early in the Spring as the land will do to work and the danger of its freezing

enough to start the roots is past. I spend more time in setting my plants than most people, set less to the acre, and hoe more, and later in the season. Mean to hoe my beds all over, very carefully, the last thing before the ground freezes up, and give them a top dressing of some good staying manure. There is nothing better than fine ground, steamed bone, and good wood ashes, ten or twenty bushels of each to the acre, and twice that will do no harm if evenly sowed. This makes nearly a perfect fertilizer for almost any fruit, but should be sown and worked into the land separately. If wood ashes are not available either muriate or sulphate of potash may be used, should be fine ground, and if the muriate, not put on to the leaves of the plant when wet, or be placed directly in contact with tender roots. The sulphate is more expensive, but in my opinion much better and is entirely safe. Three hundred to five hundred pounds to the acre will be sufficient in most cases, but if potatoes, or strawberries, or some other potash plant has been grown a long time on the land, it may require to be doubled.

No person ought to attempt the raising of small fruits, any more than he would the erection of a building, until he has learned the "trade;" and he will find it quite complicated. Then he ought to learn how best to sell it, as that will have more to do with his success, than the raising.

I see by the expression on the faces of some of my conscientious hearers, that I am not advocating *quality* as much as they would; but at present the voters buy most of the strawberries, and they are not—as a rule—as good judges of small fruits, as of beer and tobacco; besides, they are not going to eat them all themselves, as they smoke and chew the tobacco, and drink the beer.

There are a few ladies and gentlemen, who visit our rooms exhibition days to study the fruits and flowers that make our tables and Halls but a little *lower* than those protected by the "Golden Gates;" they buy understandingly, and are willing to pay for good fruit, fresh picked, and carefully handled; and rather it would'nt be "Deaconed if you please;" but the average voter, who buys strawberries, or other small fruit, with a cigar or quid of tobacco in his mouth; or the exquisite taste of foreign or home brewed liquor in his throat, cares only to have them look well on top and cost *him* but little.

The picture over-drawn? Not a bit of it! I have seen many a voter in this otherwise beautiful City, with one-half of an eight or ten cent cigar between his fingers, smoking hot from his last vile breath, banter minutes with a shopman, and finally carry off a box of strawberries, or some other berries, that you or I, Mr.

President, would not eat ourselves, and certainly not sell to scatter the seeds of disease amongst the innocent.

But to return to our strawberry plants. We shall be obliged to invest in some kind of insurance, or we may lose all that we have worked all Summer for, yet,—the crop of strawberries.

People are constantly speaking and writing about plants winter-killing; but it seldom happens here. I have yet to see the first case except some foreign variety, like Jucunda, or Triomphe de Gand; but our variable and almost treacherous Springs will kill many native varieties, unless protected.

The sun dashes out some morning early in March, and the innocent plants finding their roots liberated, rouse themselves up, and looking Heavenward, take one long breath and court the embraces of the coquettish southern breeze; their sap begins to circulate, and their rootlets to travel in the warm soil in pursuit of nourishment; but alas! the night cometh, and with it a cold northern blast, and our innocent plants are stricken down in their first attempt at flirtation! and we mourn their loss in vain, unless we learn from it, that we must depend upon our own strength and knowledge for our own and our families' support.

The best way I know of to insure the crop, is to cover or mulch the whole ground evenly, and well, to the depth of two inches at least, with coarse light hay, or leaves, or some other material that will shade the ground, and not mat down too hard. I plough a light furrow around the outside of the bed, turning it on to the mulch to hold it, and then scatter bean poles, brush, or bundles of corn-fodder over the ground at intervals to hold the rest of the mulch; all the mulch is removed from all of my beds, every Spring, when danger of freezing is over; so I can take the plants from the paths on our matted beds, to set, and sell; as also to give us a chance to hoe the ground over, and put on more fertilizers. The best spring fertilizer I use, is composted American guano, droppings of poultry composted with decomposed turf or peat.

I mulch again before the heat of Summer commences, as a summer insurance and if I use a material worth more to plough under, than to save, plough it under with the plants as soon as the strawberries are off, salting the land well beforehand.

We used to run our beds two or three years and get more profit from the C. Downings, Kinney's 10, Boyden's 30, Kentucky, and Jucundas the second and third years, than the first, until the strawberry flea made his appearance; since then we have been obliged to make the change in management; and this summer and late fall ploughing, salting, and cultivating the cabbage on the strawberry beds, tends to keep the white grub in subjection;

and he is one of our most desperate and persistent enemies ; and other worms and bugs that breed in the ground.

To assist in bracing up some of the weak and faltering small fruit growers I have copied from my books the following figures. One sixteenth of an acre of Jucundas—in hills—in 1880 yielded five hundred quarts of berries, that sold for twenty-six and six tenths cents a quart, or one hundred and thirty-three dollars, for the berries on one-sixteenth of an acre of land, or at the rate of eight thousand quarts, or two hundred and fifty-three bushels per acre, or two thousand one hundred and twenty-eight dollars per acre, at above rates, and not a very good year for strawberries either.

From one acre of Charles Downing, Crescent and Sharpless I sold three thousand two hundred and forty-four quarts, or one hundred and one bushels at seventeen cents a quart and a fraction more, or five hundred and fifty-six dollars and sixty-one cents from the acre ; these were in the matted rows, and grew corn amongst them in 1879, the year the plants were set out.

The corn paid all the expense the first season—the varieties grown were Early Minnesota, and Early Worcester sweet corn—and the plants sold and used that came from the paths in the spring of 1880 paid the expenses for that year.

From one thirty-second part of an acre in Sharpless, in matted rows, I sold one hundred and four quarts—besides all that were ate on the bed, given away, and used to exhibit—for twenty-three cents a quart, and a fraction more, or at the rate of three thousand three hundred and twenty-eight quarts per acre—or one hundred and four bushels—worth seven hundred and sixty-five dollars and forty-four cents. This was a trial bed, containing two long rows, running over level, moist, loamy land, and dry shaley hill land, and many of the berries were left on the vines too long, and rotted, which damaged others on the vines ; so I shall expect them to be fairly productive on any reasonable soil. So much for the strawberry beds we kept an account with. Now my doubting friends, the only reason I don't get rich growing strawberries, is, I don't have acres enough under cultivation.

Next in season is the Raspberry, and first ripe is the Brandywine, red, and Davidson's Thornless, black ; both good hardy varieties, and fairly productive ; and when properly cultivated on good moist—not wet—soil, well manured with strong manure, and the suckers of the Brandywine treated as weeds, are a desirable and profitable market crop ; as the canes are thornless, can be cultivated in the small garden comfortably. Neither of them has proved tender with me, and I never have covered them in the Winter, and have grown them several years.

My best Red Raspberries until I had the Cuthbert, were the Hudson River Antwerp, and Northumberland Fillbasket. What money and credit I have received from the cultivation of this noble raspberry, I owe largely to the advice, precept, and example of our worthy Secretary, who has grown immense crops of it, on his small garden plot. And I have grown the Northumberland at the rate of 250 bushels to the acre, and sold them by the bushel, at 45 cents a quart, or $14.40 a bushel, or at the rate of $3600 per acre; and it was seasons when strawberries averaged but 20 cents a quart; but alas! just as we had got the trade of growing them well learned, and a good plantation established, there came an insect of some kind—and though we have studied and watched faithfully for two years, we know him only by his works, now—that lays from ten to twelve eggs in the young canes, in the space of an inch in length of the canes, and from twelve to twenty-four inches from the ground; the canes show no disease; continuing to grow thrifty till Fall, but many of them break where they were stung, when we come to lay them down, and many more when we come to take them up in the Spring; and the destruction of the despoiler has been complete, and the last season's work has gone to the bugs. I have felt compelled to lay by on my former laurels, for the present, and watch and pray; not forgetting to work all the time to try and ferret out the enemy. I have a few samples of canes on exhibition to-day.

I have in previous years raised crops of even Brinkle's Orange—the cream of the raspberries—that satisfied me; and remove the cane destroyer, and give the canes of the above three a protection of earth in the Fall—see E. P. Roe's "Success with Small Fruits," for cuts, &c.—and the person who would not be satisfied with the crop of fruit would be a hopeless sinner.

The Cuthbert seems to be too tough for this raspberry satan, as yet, and I hope it may so continue, for it is a raspberry good enough to satisfy the most fastidious amateur, and hardy enough to stand the rough treatment of the most careless farmer, and satisfy his ambition for quantity with its bountiful crops of fruit.

The new Black Cap, the Gray, pleased me more than any other of my new small fruit friends last season; being like the Cuthbert, very large, extremely productive, and good enough for anybody.

To produce the best results, raspberries should be set three feet by five, heavily manured and mulched in Summer, and the canes tied to wires when fruiting.

Close on the heels of the Raspberry comes the Currant, claiming its share of our time and praise; and like it, it requires plenty of room in a good moist well drained soil, made very rich. The best table currants are the Dutch, red and white, white Gondouin and White Grape; and the best market currants are the Cherry and Victoria. I am glad to stand with E. P. Roe on this currant question; he says on page 223 of "Success with Small Fruits:" "The horticultural doctors disagree so decidedly, that the rest of us can, without presumption, think for ourselves," &c. I have always contended there was no Versaillaise, but all were Cherry.

As for profit, I have made as much from raspberries and currants as from strawberries, but the crops are not so sure.

Who would be without the Blackberry? There were no fruits, or thorns, struck me more forcibly than those of the Snyder blackberry last year. They had the power to raise the blood to the boiling point, and make it boil over, literally I never have raised anything but chickens, that drew such crowds, either rain or shine, as did the Snyders. And I never ate anything but a first-rate custard pie, when very hungry, that was any better than a thoroughly ripened Wachusett blackberry, taken from the bushes in the cool of the early morning, and laid away in my stomach in just ten seconds. Really I need only these two blackberries to fill my bill; they are hardy, productive and good. Still I presume I shall try all the new varieties that are advertised, and raise a few hundred seedlings, to keep my spirits up.

Blackberries need to be set four feet by eight, and if the plantation is wide, every other space should be ten or twelve feet, so one can drive through with a cart or wagon. I trim or pinch but little on my soil, treat like weeds all plants that I do not want, tie bearing canes to wires same as raspberries, and mulch heavy enough to keep down weeds. I find them gross feeders, like all the other small fruits we have glanced at. My blackberries yielded at the rate of ninety bushels to the acre, and brought 15 cents a quart, or $4.80 a bushel, or at the rate of $432 per acre; about one-half profit. Part of the plantation had been set but one year. One small lot yielded at the rate of 150 bushels to the acre; they were about one-half Snyder and one-half Wachusett, and had been set three years.

Every family that has much land ought to have a Cranberry-bed. There are three American varieties—the Bell shaped; the Cherry, large and small; and the Bugle, oval or egg shaped, large and small. Although the Cranberry is a native of moist or wet land, it can be grown profitably on dry soil, by making a

bed composed of peat composted with manure and sand; care should be used so as to avoid getting in grass and weed seed, or roots. Such a bed ought to yield one to two bushels to every twenty square feet of land. It is a crop that will always pay when properly grown. There is no small fruit that keeps so long or is better liked.

There is many a bog meadow in Worcester County that is worse than worthless inasmuch as it is the birthplace of miasma, that might with a small outlay be converted into the most profitable land in the neighborhood. And yet, Mr. President, we, the exponents of Horticulture in the County, do not even offer a *Gratuity* to encourage its cultivation.

Grapes are good in their way and would feel slighted if we skipped them altogether, but if I only wanted to talk about them as the respected Commissioner of Agriculture of the United States of America does in his circular dated November 25, 1880, "How could we make the most and best wine out of them?" I should pray that my tongue might be paralyzed. I have a large family of children and say with A. M. Purdy, editor of the *Small Fruit Recorder*,—and I thank him here, and now, for the firm stand he has always taken in this matter—that I rather follow any of them to the grave, than have them sit at a table where wine was part of the repast, or any other fermented liquor, even apple juice. I thank God I can hear of no wine having been made from grapes in this good old County of Worcester this year, and hope I never shall; or in the State either!

But I do hear that many of the worthless tracts of hill land are being set to grapes; and that all who are using good judgment in selecting locations, varieties, and fertilizers, are well pleased with their success. There are thousands of acres in Massachusetts that do not produce enough to pay the taxes on them now, that a small capital of money and labor would make the most profitable land on the farm, if invested in this grape industry. There is a constant and growing demand for good ripe home-grown Concord grapes.

It needs about four hundred and fifty vines to the acre, for side-hill land, making them eight feet by twelve—and they would cost about thirty dollars; posts, and wire, and labor, and some compost to put in the hills to start the vines would cost forty dollars more; and there ought to be enough of some other crop raised on the land the first two or three years, before they were old enough to bear much, to pay for the labor of cultivation, and bone and other fertilizers that the vines need, and several crops of grapes.

The greatest trouble in grape growing comes from over manuring, and too much moisture. The grape is different from the other small fruits we have talked about, in this respect. There is very little danger of *its* suffering from drouth, if the roots and foliage are not destroyed too much, in the growing season.

I have better luck where I mow my weeds often and let them lay on my strong soil, than where I cultivate, to kill them.

I have corresponded with most of the vineyardists in this part of the State; and the average yield per acre is one and three-fourths tons this season, and the average wholesale price is seven and one-half cents per pound, or two hundred and sixty-two dollars and fifty cents per acre, and this has been an exceptionally poor year—so they all say—the rose bugs having done more damage than usual. The chances are that they will average more than this for the next twenty years, and when a vineyard is once established, if not allowed to overwork itself while an infant, it will last as long as a family.

There is no fruit, small or large, more surely remunerative, if grapes are grown strictly for food. The natural, or otherwise, enemies of the grape are as easily managed as those of other fruits. I think sometimes that robber birds, pestiferous insects and dare-devil weeds are friends in disguise; they compel us to be vigilant.

There are several grapes that are desirable to have in all collections, old and new, and some new ones that we hope will pay as vineyard grapes. Capt. John B. Moore, of Concord, Mass., has given us one, "Moore's Early," that he has great hopes of, and the Worden, another Concord seedling, is very desirable; and the Delaware, who would try and get along without it? or the Agawam, or Salem, or Massasoit, or Lindley? the last two being better than all the others of Rogers Seedling, and though the Worcester County Horticultural Society have left you out in the cold, my old and tried friends, I will take you in every time I find you good and ripe; and I shall grow the Merrimac, and the Wilder, for I like grapes in February and March as well as in September and October, and the old Diana, the good old winter grape that will keep till May if we let it alone.

The Brighton ought to be a good vineyard grape, it has done so well for the amateur. Still later we have the Lady and Prentiss, two new native white grapes that are spoken well of by those acquainted with them.

I would like to introduce many more new friends to you, would time and your patience permit, but will close by offering a plea

for the weeds, to offset against my friend's plea for the birds :—

I looked where the roses were blooming,
They stood among grasses and seeds,
I said, "Where such beauties are growing,
Why suffer the paltry weeds ?"

Weeping, the poor things faltered,
"We have neither beauty or bloom,
We are grass in the rose's garden,
But our Master gives us this room.

"The slaves of a generous Maker,
Born from a world above,
We came to this place, in His wisdom,
We stay to this hour, from His love.

"We have fed His humblest creatures,
We have served Him truly and long;
He gave no grace to our features,
We have neither odor nor song—

"Yet He who made the roses,
Placed us in the self-same sod,
He knows our reason for being,
We are grass in the garden of God."

House Plants for Winter.

By William W. Cook.

Read before the Worcester County Horticultural Society, Feb. 24, A. D. 1881.

Mr. President, and Ladies and Gentlemen :—The subject for our consideration to-day is "House Plants for Winter." And I understand that plants in conservatories connected with dwellings are included in the term used, as well as plants in the sitting-room or parlor. And the phase of the subject which I shall try to present in these remarks, is, "How to grow them."

And though I shall mostly speak in general terms, only alluding as it were incidentally to particular kinds or classes of plants, I shall endeavor through the whole, as far as I may be able, to answer the thousand-and-one questions, which are put to me every year, by ladies who have some kind of sick plant. Now a plant is not sick without cause. That cause may be too much water. It may be too little water. It may not have a congenial soil. It may have been kept in too high a temperature, or it may have been chilled. Now I cannot tell what ails a plant even when I see it, with a great degree of certainty, because I do not know what kind of care it has had.

But I know there are certain general principles of treatment necessary to be observed by every one who would grow plants successfully. A practical knowledge of these will not only aid one in keeping plants well, but it will also aid in detecting the cause, as well as in applying the cure for sickness. These general principles of treatment require that the plants must have a suitable soil to grow in, a proper temperature around them both day and night, and a sufficiency of moisture without any excess, applied to both roots and foliage. If these three things are faithfully attended to, it only remains to defend the plants from insects and they must flourish. To begin right in growing plants we must have a congenial soil for the roots. This should be light and rich, without any tendency to sourness. And it should not become baked and hard from the frequent watering necessary for plants in pots. On this account, the soil from the garden beds should never be used. When this is watered, it

is mud, and when it becomes dry, it is like a brick. It may be improved by the addition of old well-rotted manure and sand, but will never be good potting soil.

The best thing I know of, for a basis for a potting compost, is leaf mold from any kind of deciduous trees. Pine and other evergreens are to be avoided. This leaf mold may be from the leaves raked from the lawn, or any other convenient place; but it is necessary that they should be thoroughly decayed. When it becomes truly *mold* it is all right. Some varieties of leaves will hardly do this under two or three years.

Or, you may go into any deciduous woods, and after scraping away the leaves, take the layer of decayed vegetable matter under them. This, if obtained in the Spring, and overhauled a few times during the Summer, will be in good condition to use in the Fall.

Where leaf mold cannot be obtained, the next best thing is rotted sods. Take them two or three inches thick from an old pasture, or some light warm soil, never from soil that is heavy or clayey. They should be packed one upon another (in June is the best time) and towards Fall they should be thoroughly chopped and mixed over with the spade, two or three times, till they become quite fine. Then add to this, one-fourth of its bulk of old hotbed, or other thoroughly rotted manure. It is better if several years old. Add to every bushel of this mixture one-half peck of rather coarse sharp sand. If you are fortunate enough to obtain the leaf mold, you may use less manure and more sand.

A compost prepared in this way will be excellent for all kinds of common house plants, such as Geraniums, Petunias, Primroses, Fuchsias, &c. For Ferns and Lycopodiums, leaf mold and sand without any manure is best. But a very good substitute may be made by taking one bushel of the potting compost just described and add one and a-half pecks of sand, and one peck of old dry peat. This makes a soil very well adapted to most of the ferns and mosses when grown in pots, and it makes a good soil for Wardian cases. And if made a little richer, it is an excellent soil for Callas.

Of course Gardeners, when they are potting off a batch of plants, will vary the proportion somewhat, putting in more or less of sand and manure, according to the needs of the variety they have in hand. But there will always be good results, so far as they depend on the soil, from using such a compost as I have described.

The plants being potted in a suitable compost, they must have a temperature suited to the conditions of growth. And for most

of the plants commonly found in houses, a medium temperature is the best. A common living-room which is kept at a heat of seventy degrees or more till ten or eleven o'clock every evening, has a great deal higher average temperature than a common greenhouse. My largest greenhouse has not averaged so high as sixty-five degrees for six hours in the day since last October, while the night temperature has averaged from fifty to fifty-two degrees. Those of you who have visited it, can judge whether the temperature is such as to produce healthy plants.

The reason why plants are injured by such a high temperature in the night, is, that the heat stimulates the plants to try to grow when they lack one of the most essential conditions of growth, and that is light; and they grow weak and spindling. If possible, the temperature should be at least ten or fifteen degrees lower while it is dark. This may be attained by drawing a curtain between the plants and the room. In a bay window this can be done very easily. Of course it is necessary to be careful that in cold nights the temperature does not get low enough to freeze the plants.

A bay window in a dining-room which is heated from adjoining rooms, and which is allowed to get as low as fifty-five degrees at night is nearly as good as a conservatory which has no overhead light.

There are very vague notions about the giving of fresh air to plants. And plants in sitting-rooms and parlors are often injured by this giving of fresh air as it is called. When the room is swept, the windows and perhaps the doors too, are thrown wide open to let out the dust, and because the fresh air is so good for plants they are left open till the tender ones are fairly chilled. And then people wonder why they have such poor luck with plants? But it is no wonder!

It should always be borne in mind that no sudden changes in the temperature should be made. Nature does it just right. And how beautiful it is! First, the slowly increasing light awakens the plants from their nightly slumber, gradually arousing more and more their dormant energies, till the heat of noonday; and then as gradually quieting down to their evening rest, till the sun goes down and the darkness comes on.

A conservatory should be so constructed that some means of ventilation is easily accessible; and it should be where the cold air of Winter will not blow directly upon the plants. The mercury in a shady place in a conservatory ought never to rise above 70 degrees during the cold weather. As long days come on, and growth becomes more vigorous, 75 or 80 degrees would be permissible, but at night it should always be kept 15 or 20 degrees cooler.

Another important thing is, to give air gradually. Do not wait till the plants are half baked with the heat and then open the ventilator with a rush, but open in season a little, and then if you find the temperature too high, open a little more It is surprising how little is needed, if it is begun in season. It is better to close up the ventilator early rather than late, and then, if you use the syringe at all on your plants, give the foliage a good drenching. It not only refreshes them at the time but it creates a moist atmosphere which is most beneficial.

But there are a few plants, such as Callas, Smilax, etc., which I find are very much injured by the sun shining on the foliage when it is wet, and where these are contained in a collection of plants the syringing must be deferred till the sun has left them for the day. Where plants are kept in the sitting room or parlor they must have such temperature as the people who occupy the rooms require, because their health is of more consequence than that of the plants. Some plants do much better than others in such situations, and people must select such varieties as they succeed best with and let the others go.

But you may have the soil and temperature all right and have miserable, sickly plants, because of errors in watering. A plant may be drowned to death, or it may be dried to death. And the fact of death is just as serious to the plant, or plant grower, whether from one cause or the other. But the drowning to death is much more astonishing to the owner than the drying. Plants that are being over-watered seem to thrive exceptionally well for a time and then suddenly wither and die, and if you take hold of the stalk it will be seen that the roots are gone.

In watering, then, as in temperature, the "golden mean" must be observed, avoiding extremes. If you ask how the "golden mean" is to be attained, I answer, dismiss from your minds at once all ideas of watering once a day, or once in two days, or at any stated time. The atmosphere is in a condition some days to draw the moisture from the earth in your lower pots much more rapidly than it will other days.

Plants in small pots will need water oftener than those in large pots; and plants in the full glare of the sun, especially if its rays fall on the pots, require much more water than plants that get no sun at all, or get it at a distance from the glass. It is also necessary to be much more cautious in watering plants that are kept in pots that are glazed or painted, or in vessels of wood. If the earth in either of these is watered till it becomes mud, the plants growing in it, unless of pretty good size and strong growers, will not absorb all the water until it becomes sour, and either the plant dies, or more

likely, so many of the lower roots decay that the plant becomes stunted and sickly. Being worse than dead, because it is an eyesore, and a disfigurement to the plant-stand, and yet it has so much life left that you hate to throw it away.

Moreover, we learn by experience, that some species of plants naturally require much more water than some others in the same situations. Plants with an abundance of broad thin leaves will require much more water than plants with small and thick leaves. All plants with thick and succulent leaves, like the Cactus family, and most varieties of Begonias, must be watered more sparingly, and when dormant should have very little. Shrubby plants, such as Azaleas, Camelias, etc., must be rather sparingly watered in the earlier part of the Winter till they get ready to bloom and not excessively watered at any time. Azaleas seem to get sick very easily, and my experience is that very few sick ones get well.

I am often asked the question, "How often do plants need water?" To this I make answer, that plants in small pots, standing in a sunny window close to the glass, especially if the sun shines on the pots, may require water twice a day. While plants in larger pots, not in the direct rays of the sun, may require it no oftener than once or twice a week. So then, the only rule about watering plants, is to feel such a loving interest in them, that they are examined carefully every day and water given when it is needed.

One of the most injudicious ways of watering is to give a little every day. For when you do that some of your plants may be starving and others drowning. For instance, if some of the plants were too wet, a little every day would keep them so; and if some of them were quite dry a little would only moisten the top of the soil while the larger part of the roots would be suffering from drouth.

The true way then is to give enough to thoroughly moisten all the soil in the pot, then wait till it gets pretty dry before you give it any more. This applies to plants in common flower-pots. For plants in glazed pots, or window boxes, another rule must be observed and that is, not give them enough to go to the bottom. Such plants require a great deal more care in watering than plants in common pots do, and unless good judgment is used there will be an excess of water at the bottom and the plants will become diseased.

Another point to be observed if plants are to be kept in the highest state of health and vigor is to apply water to the foliage as well as the roots. I have spoken of syringing the foliage when you close up the ventilator in the conservatory, but plants not in a conservatory need this refreshment just the same.

At least once a week take them to the bath-room or kitchen sink, or any other suitable place and syringe copiously on both the under and upper sides of the leaves. It is best to use a syringe because if the water is applied with some force, it has much effect to remove both dust and insects. If you have no garden syringe give the plants a good showering from the nose of a watering-pot, and an attendant, if possible, should hold the plants so that the under as well as the upper side of the leaves may get its share. If no other way is attainable moisten the foliage and stems thoroughly with a soft sponge or rag. I have said this should be done at least once a week, but three times would be better.

I find that two different motives actuate people in growing plants in the dwelling. One class desires merely to save as many as possible of the plants which have flowered in the garden in the Summer time. If they can keep their plants through the Winter, and have them in good condition to plant out by planting-time, they are satisfied. They save their plants and towards Spring they begin to have blossoms. The other class desires blossoms and would not care for the trouble of plants, only for the flowers. In order to have them, the plants must be in a healthy, thrifty condition. And of course it is useless to expect many blooms in the early part of Winter from plants taken out of the ground in the Fall.

If you are unable to accommodate plants of good size, take off cuttings in July and grow them so they will be ready to bloom early, and they will generally keep on after once beginning. But if you have room for good sized plants, it is better to keep them in pots all the time. When the weather becomes warm enough to put them out of doors, place them on a bench or table in some place where they will get the morning or evening sun for an hour or two, and where they will be somewhat sheltered from violent winds. Give them only water enough to keep them from withering, and let them rest. They will need no other care, except to prevent their ripening seeds, till about the first of August. At this time, they should be re-potted, into pots about two inches larger than those they are in. This will give an inch of fresh soil all around the old ball, which, for most plants is quite sufficient. If the pots already in use are as large as can be permitted, the old ball may be reduced by using a round-pointed stick, till it will admit an inch of soil around it. If there is straggling, long jointed wood which needs to be shortened in, now is the time to do it.

After re-potting, let the plants remain in the same place for two or three weeks, and then if it is convenient, remove to a

place where they will get the sun all day, and let them remain till it is time to take them into the house. And this ought never to be delayed till the nights become cold enough to give them a very severe chill.

I think if people would only try this method once, they would find that a few bushy, well grown plants, will give them more satisfaction than a houseful of stubby things taken out of the garden.

I am often asked about fertilizers for pot plants. If plants appear to languish from any cause, many people seem to imagine that the soil is not rich enough. It does not occur to them that there may have been errors of treatment which have caused the difficulty and, misled by the crafty term "*plant food*," they think by feeding them more they will be all right. And so they often put on enough to destroy their plants entirely. It is my candid opinion, that the so-called "*Plant food*" in one form or another, has killed a good sized Greenhouse full of plants here in Worcester, within a few years. The tendency is always to use too much.

If plants are potted in a suitable soil to begin with, and re-potted in a suitable soil as often as they may need it, most kinds require very little extra fertilization. When they become *pot bound* as gardeners term it, and it is not desirable to use pots of a larger size, some kind of liquid manure can be used to advantage. And it does not make much difference, whether you use some of the various kinds of plant food, or a little Peruvian guano, or the guano from your hen yard. Only you can go to Mr. Rice's and buy twice the bulk of guano for the money you pay for plant food, and about all the good there really is in plant food, I imagine, is from the guano that is in it. At any rate, I venture to say, that there is twice the value for plant use in a pound of guano, than there is in any kind of so called plant food. I suppose that most people are led into an extravagant use of some form of manure for plants, from the mistaken idea that plants receive the greater portion of their nourishment through the roots. And so they think to make the plants thrive, just as they would fatten a chicken, by stuffing. It is true, that vegetation generally derives most of its water from the ground through the roots. And by far the greater portion of all living plants is water. But this water is contained in a wonderful system of veins and cells, which compose the solid portions of the plant. By far the greater part of this is carbon. If the water is dried out, and the carbon burnt, there is a very small residue left. The most of this, probably, comes from the ground; while it is probable, that the carbon, or nearly all of it, is absorbed from the air through the leaves.

We must therefore dismiss the idea of feeding plants as we do animals, entirely from our minds. All we can do, is to supply the best possible conditions of heat and moisture, as well as pure air and clean foliage, and the plants themselves must do the rest.

Although I fear I have already wearied you, I wish to say a few words on another topic, and that is, Rare and New Plants.

Every winter, in every considerable city, somebody goes about with some wonderful new thing. They got it from Mr. Vick, or they were sent out by some other great florist, to sell for them some unheard of new bulb, or lily, or something else. And always they find purchasers, in plenty, whether it is for a "Double Oxalis" or for the wonderful "Tassa Masacca."

Now here are your florists whom you all know, always on the lookout for something new, for their customers. And here are all the great propagating and wholesale houses in the country sending out every Spring and Fall, their catalogues of new and rare things for us to buy. Now I receive towards a half-bushel of such catalogues; some from Germany, some from Holland, some from England and Scotland, besides what I receive from our own country. And Mr. Lange, or Mr. Thayer, or Mr. Keyes, or any other florist could probably say the same. Now I want to ask in all candor: Is it wise to expect that some tramp is going to sell you some really desirable new thing, that none of us ever heard of? Perhaps none of *you* ever bought the "*Double Oxalis?*" but there were a good many who did; and when their plants blossomed the flowers were not double.

The "Tassa Masacca" was got up in this way:

It was a dull season of the year, and two or three young clerks got their heads together to see what they could do. They took some *Pearl Barley* and colored it a fine pink color with an aniline dye. Then they got a lot of seed bags at the seed stores and some flaming pictures of some not very common thing from an old Horticultural magazine, or some seed catalogue, and as a Latin sounding name would be more like the names the seedsmen send out, they had the name "Tassa Masacca" printed on their seed bags. Of course, the plant being so rare, they could only afford a few seeds to a packet for such a low price. One of the young men engaged in it told me all about it. Says he, "mind you, we did not sell any of them. We got two or three newsboys of our acquaintance to do the selling for us and we gave them a good percentage on what they sold." "Did they sell many?" I asked. "Sell!" says he, "they went like hot cakes. Each boy had one of those pictures to show what the seeds were going to produce, and some of them made two or three dollars a day selling our pink Pearl Barley at twenty-five

cents a package." Says he, "I believe the women rather like to be humbugged!" I would not like to say that. But I must acknowledge that it requires considerable effort to feel a very deep sympathy for any one who will pay a high price for a new and rare flower to a newsboy or tramp.

I regret very much that I am not more skilful with the pen. I feel that I have failed to do justice to the subject, or to those who have done me the honor to come out and hear what I have to say. But my heart has been in the work, and I have spent such time as I could well spare. I have tried to give some of the results of many years experience in the cultivation of flowers. I truly love them, and from the time when as a boy I used to roam the fields to see how great a variety I could find, to the present hour, I have found them an unfailing source of attraction and pleasure. In the Summer they beautify our grounds and make home itself seem more home-like. And house plants in the Winter, if well grown, are a perpetual joy to both old and young. If I have been able to say anything which shall help other lovers of flowers to be more successful in cultivating them, I shall be well repaid for the time I have spent.

Not every professional gardener is a nice man, and not every woman who grows plants is a lady, but I am sure that where they are grown and cared for from a love of them their influence is both elevating and refining. And as we watch the unfolding of buds and blossoms on the plants which are the object of our daily loving care, it would seem that some thought of love and gratitude to Him who formed the heavens and the earth in beauty must spring up in the coldest heart.

Æsthetics of Earth Culture.

By Henry L. Parker, Esq.

Read before the Worcester County Horticultural Society, March 3, A. D. 1881.

The Arts may all be classed under two general heads—the mechanical and the liberal or fine. The mechanical arts are those which tend to create or improve the necessities, comforts and conveniences of man. The liberal or fine arts are those which tend to elevate or improve the moral and intellectual qualities with utility as a secondary object. They are addressed to the imagination and the feelings, and excite pleasurable emotions by creations of the beautiful.

From an early age gardening has been classed with Poetry, Painting, Sculpture, Engraving, Music and the Drama, and treated as a fine art.

History demonstrates the fact that Agriculture is one of the first agencies of civilization. The cultivation of the earth is always a step preliminary to the cultivation of the arts and sciences. Not one nomadic tribe ever yet became civilized until first having fixed its habitations, enacted laws securing to each individual the rights of property, and turned its attention to the raising of annual crops instead of wandering from place to place and gaining a precarious subsistence by hunting or upon its flocks and herds. In fact such a roving life seems antagonistic to civilization, as witness the Arab and Tartar tribes in whose social and moral status centuries have made no improvement. Not one idea of benefit to the world ever originated with them, but when these tribes become once attached to the soil and commence its cultivation they advance at once in the scale of civilized life.

Thus Greece and Italy were pioneers in the civilization of Europe. And why? Because they were the first to practice Agriculture. The savage tribes which inundated Europe from Western Asia became attracted by the fertile fields, genial climate and pure skies of that loveliest of all lands—Italy. Here their wanderings ceased. They substituted for their huts and tents more permanent dwellings, began the cultivation of the earth, and the result was an agriculture which in many respects has not been surpassed in modern times. Fruit and vegetables received their share of attention. Pliny speaks of

the great varieties of pears and the abundant corn crops at Rome. Cato left many hints of value to the farmer or horticulturist of to-day. Seneca raised asparagus such as our markets have never seen. Many implements of husbandry similar in principle and structure to those of which we boast so much, and which we claim to be of modern invention, were known to them. Such was their pride in these pursuits that their most distinguished families were named from the products of the earth, or from implements or animals intimately connected with its cultivation.

Thus the Fabii deriving their name from *faba*, a bean, were renowned for the cultivation of this esculent. The Pisones were named from *piso*, to bray or bruise (presumably corn as in a mortar). The Lactucini from the lettuce. The Porcii were originally swine-herds. The Ovinii were originally breeders of sheep—the Caprillii bred goats—the Taurini, bulls.

But while it is true that agriculture is always a preliminary of civilization, it is equally true that the progress of any nation in civilization and refinement is marked first by fruit production and secondly by floriculture and landscape gardening.

First comes the struggle for existence and the supply of the active wants and necessities of man, then the gratification of the luxurious cravings of the palate, and lastly the gratification of taste.

As soon as man had passed the ruder stages of existence, from the life of the hunter and shepherd to that of a proprietor in the soil, and had begun the observation of particular plants, their change and decay, their life and propagation, their special properties, so soon did they begin to assume for him a spiritual meaning; they were personified and became the symbols of moral and spiritual qualities. Thus from time immemorial the never-dying Cypress and the blue Asphodel (springing up with every recurring season from its bulb buried in the earth) have been the emblems of immortality. Among the early Egyptians the Lotus was the symbol of fertility. Among all nations, and the most ancient, peace and victory have been symbolized respectively by the Olive and the Palm, love and marriage by the Rose and Myrtle, modesty and purity by the Violet and the Lily.

The Christian era from its very beginning has been especially marked by this symbolization of plants and flowers. The death of our Saviour and all its surroundings is supposed to be set forth in the Passion-Flower, from whence it derives its name. As one writer expresses it: "The leaves represent the spear which pierced His side, the tendrils the cords which bound His hands

or the stripes with which He was scourged, the ten petals the ten Apostles who deserted Him, the pillar in the centre of the flower the cross, the stamina the hammers, the styles the nails, the inner circle about the central pillar the crown of thorns, the radius around it the nimbus of glory, the white in the flower is an emblem of purity, the blue a type of Heaven. It keeps open *three days and then dies— denoting the death, burial and resurrection of our Lord."

There have been several traditions as to what particular tree furnished the wood of which the cross was made. One tradition ascribed it to the Aspen, whose leaves have been since the crucifixion in constant agitation in remembrance of that dreadful event. Another ascribes it to the wood of several trees:

† "Nailed were His feet to Cedar, to Palm His hands,
Cypress His body bore, Title on Olive stands."

The scourges with which our Lord was beaten were made from the Weeping-Willow. The Purple Orchis, also called Gethsemane, is supposed to have grown at the foot of the cross and to have been stained with the blood which flowed from it.

Many flowers were named from the Virgin Mary—the Marigold, Lady's-fingers, Dame's Violet, Lady's Mantle, Lady's Slipper, Maiden Hair and many others. The Marigold is so named because in bloom on all festivals held in honor of the Virgin.

Many flowers were also dedicated to the Saints. Feathergrass was dedicated to St. Alban, the first martyr of England. The Daffodil to St. Perpetua, martyred during the reign of the Emperor Severus. The poet Herrick says :

"When a daffodel I see
Hanging down its head towards me
Guesse I may what I must be,
First I shall decline *my* head,
Secondly I shall be dead,
Lastly, safely buried."

The flower of St. Duntsan was Monkshood; of St. Augustine, Archbishop of Canterbury, the Rhododendron ; of St. Bartholomew, the Sunflower ; and so the list might be indefinitely extended.

But the development of gardening as a fine art can hardly be so well illustrated by the life of individual plants as by noting

* A devotional spirit seems to have strained a point here. The varieties of the *passiflora* generally known to us, remain in bloom but a single day.

† Pes Cedrum est truncus Cupressus
Oliva supremum palmaque transversum
Christi sunt in cruce lignum.

its progress and distinctive character in those nations where it has been most successfully practiced.

Among the oldest gardens of which we have any record are those of the Egyptians. Our knowledge of them is derived for the most part from the paintings and sculptures of Thebes. Their arrangement would be hardly consonant with modern taste. They were usually in the form of a quadrangle, with a vineyard in the centre also in the form of a quadrangle. Around the outer quadrangle were rows of Sycamores and Date Palms planted alternately. Tanks of water were constructed at regular intervals, near which, and fed by the moisture therefrom, were tufts of papyrus. Although it is said that the ancient Egyptians were fond of flowers, and that wreaths and chaplets were common among them, there is a singular absence of plants and flowers in the representations of their gardens to be found in their ancient ruins. But there *is* evidence that the topiarian art or custom of pruning or trimming trees into fantastic shapes was not entirely unknown to them.

Some of the great nations of antiquity like Babylon and Assyria were renowned for their stupendous gardens. The hanging garden of Babylon was ranked among the seven wonders of the world. It was built by Nebuchadnezzar for the gratification of his Queen, that she might have something to remind her of the mountains of her native country. It was built in the form of a square, the base of which occupied four acres, and was composed of terraces which rose one above the other until the highest overtopped the walls of the city three hundred feet high. These terraces were built up with huge stones, provided with sloping paths which reached the summit, and planted with trees and shrubs so as to give it the appearance of a mountain. At the base of the garden flowed the river Euphrates, or rather a canal from that river, and an aqueduct was constructed so as to convey the water from this canal to the top of the highest terrace for purposes of irrigation. Large hollow piers were built and filled with mold to provide sufficient earth and moisture for the support of the largest trees.

At Nineveh gardens were laid out within the city walls, some of them being of considerable extent. In the British Museum are bas-reliefs representing apparently the gardens of the Assyrian Kings dating back to at least 1200 years before Christ. These show Vines, Palms and other trees, and a plant in full bloom. Upon one of them is a representation of an Assyrian bower composed of Vines, in which sits the king of Assyria and his Queen.

The garden of Semiramis is said to have been fourteen furlongs in compass.

Damascus was noted for its gardens which extended for more than thirty miles around. A writer of the fourteenth century states that the gardens about this place amounted to no less than 40,000.

At Jerusalem the wealthy citizens had their gardens without the city walls. None but rose gardens were allowed within the city walls on account of the unhealthy effects supposed to arise from the putrefaction of weeds and other offensive substances.

Among a people like the ancient Greeks whose strongest national characteristic was a love of the beautiful; a nation where oratory, philosophy, poetry, painting and sculpture received its highest development; we naturally look for a love of the ornamental in their horticulture, and for high attainments in the way of floral and landscape gardening. Yet although we know that the Greeks had great fondness for flowers, the rose, the lily and the violet being their especial favorites, and that wreaths of flowers graced all festive occasions—yet we fail to find any evidence that they were enthusiasts in floriculture or reached the highest standard in landscape gardening. We can find but meagre hints of these acquirements in this direction from their early literature. The only extended allusion to horticultural pursuits which we find in Homer is his beautiful description of the Garden of Alcinous:—

"Close to the gates a spacious garden lies,
From storms defended and inclement skies;
Four acres was the allotted space of ground
Fenced with a green enclosure all around.
Tall thriving trees confess'd the fruitful mould
The red'ning apple ripens here to gold.
Here the blue fig with luscious juice o'erflows,
With deeper red the pomegranate glows;
The branch here bends beneath the weighty pear,
And verdant olives flourish round the year.
The balmy spirit of the western gale
Eternal breathes on fruits untaught to fail;
Each dropping pear a following pear supplies,
On apples apples, figs on figs arise.
The same mild season gives the blooms to blow,
The buds to harden and the fruits to grow—
Here order'd vines in equal ranks appear
With all th' united labors of the year;
Some to unload the fertile branches run,
Some dry the black'ning clusters in the sun;
Others to tread the liquid harvest join,
The groaning presses foam with floods of wine.
Here are the vines in early flower descried,
Here grapes discolored on the sunny side,
And there in Autumn's richest purple dy'd.
Beds of all various herbs forever green,
In beauteous order terminate the scene."

Although this description is supposed to be wholly fabulous—a figment of the brain—it has no less value as an indication of the state of horticultural art in Greece when Homer sang his immortal Epic. In fact its value is rather enhanced by its fictitious character, for the poet may be supposed in such case to give loose rein to his imagination, and to depict in glowing terms the highest conception possible to a Grecian of what a garden might, could, or should be. And it is to be noted that in this description no flowers are mentioned. The garden is made to tickle the palate rather than to gratify the eye—it is a picture of sensuous rather than spiritual beauty. And no exact and definite description of a flower garden (so far as I am aware) can be found in their literature which can be cited as a type of their national taste. Plutarch says the Greeks planted roses and violets among the onions and the leeks. It is probable that in their floriculture they combined beauty with utility for the most part. Yet flowers were in constant demand in all their civil and religious ceremonies. Crowns and wreaths were worn by priests in their sacrificial rites. Actors, clowns and spectators at their games and theatres wore flowers in profusion—garlands were placed at the doors of temples and upon the altars of the gods. Pollox mentions the following as the principal flowers used by the Greeks in their crowns and garlands:—roses, violets, lilies, the water-mint, anemones (or the wind flowers), wild thyme, crocuses, hyacinths, the gold-colored aurelia, the hemerocallis (or flowers that bloom but for a day), the elenia, the thernalia (a plant the leaves of which are lit for the wicks of lamps), the asphodel, the white daffodil, the sweet lotus, the camomile, the parthenis, and such other flowers as are delightful to the eye and possess a sweet fragrance. So although the taste of the Greeks for landscape gardening was not developed in the direction of extensive ornamental grounds, yet much artistic effect was produced in the arrangement of fountains, shade-trees, evergreens and flowering shrubs. Among their evergreens the myrtle was a favorite. Sometimes it bloomed as a small shrub, in other places it rose to the height of a tree, while elsewhere it was planted in dense clusters or thickets and arched in bowers. Among their trees and shrubs were the tamarisk, the strawberry tree, the box, the bay, the juniper, the styrax, the white flowered laurel, the pine-tree, the smilax, the cedar, the carob, the maple, the ash, the elm, the plantane, and the evergreen oak. With the exception of the elder and the younger Pliny there is almost the same meagreness of allusion to horticultural pursuits in Roman as in Grecian literature. Even Virgil, their greatest poet, although he devotes the Georgics—next to the Æneid, his most famous poem, to agriculture, and topics intimate-

ly connected therewith, gives us no insight whatever into the condition of the horticultural arts. There is a passage in the fourth and last book of the Georgics which contains the intimation that gardening might become the subject of a future poem, but unfortunately for us, if such was the poet's purpose, he did not survive to execute his conception. The passage is as follows:— "And now, were I not just furling my sails with the close of my labors and hastening to turn my prow towards land, perhaps I might sing how rich gardens should be adorned—what treatment is needed for the rosaries of Paestum, where flowers come twice a year—how endive and green banks of parsley delight in drinking the rills; and how the cucumber winding through the grass swells in round juiciness. I might sing too and forget not of the snowflake and the flexile broom, and of the ivy with its creamy foliage; and of the myrtles that love the shore. Do not I remember that old Corycian who amid his vervain and white lilies found happiness of mind that was equal to the wealth of kings? Ah yes, the first was he to gather the rose of Spring and the fruit of Autumn. And even when sad Winter split the rocks with cold and bridled the current of the streams with ice—in that very season was he cropping the locks of the soft Acanthus. He had Lime trees (for the bees) and Stone Pines in great abundance, and as many fruits as the liberal tree had given promise of in early blossom so many did it retain in time of ripeness. But these I must leave on one side, restrained by the narrow bounds I have prescribed myself, leaving them to others to record." The first Roman garden, of which we have any account, was that of Tarquinius Superbus in the fifth century B. C. But at the beginning of Roman power every household, however humble, was supposed to own its small plot of ground, and in the laws of the twelve tables the words *hortus* and *heredium* or *garden* and *inheritance* were equivalent terms. As Rome increased in power and population, and the exigencies of city life rendered open air gardens impracticable, they resorted to pot and window gardening, and adorned stairways, steps and balconies, as well as windows, with pots and vases of vines and flowering plants. But the distinctive feature of Roman gardening was the Roman villa and the pleasure grounds connected therewith. The best description to be found of this, is the letter of Pliny the younger, describing his villa and garden at Tusculum. It is as follows:— "Before a portico in front of the house is a sort of terrace embellished with curious figures and bounded with a box hedge, from whence you descend by an easy slope adorned with the representation of divers animals in box answering alternately to each other into a lawn overspread with the soft—I had almost said the

liquid—acanthus; this is surrounded by a walk enclosed with tonsile evergreens, shaped into a variety of forms. Beyond it is the gestatio laid out in the form of a circus, ornamented in the middle with box cut in numberless figures, together with a plantation of shrubs prevented by the shears from shooting up too high; the whole is fenced in with a wall covered with box rising in different ranges to the top. On the outside of the wall lies a meadow that owes as many beauties to nature as all I have been describing within does to art; at the end of which are several other meadows and fields interspersed with thickets. The hippodrome is encompassed on every side by plane-trees covered with ivy, so that while their heads flourish with their own foliage their bodies enjoy a borrowed verdure; and thus the ivy, twining round the trunk and branches, spreads from tree to tree and connects them together. Between each plane-tree are planted box-trees, and behind these bay-trees which blend their shade with that of the planes. This plantation forming a straight boundary on both sides of the hippodrome, bends at the farther end into a semi-circle, which being set round and sheltered with cypress-trees, varies the prospect and casts a deeper gloom; while the inward circular walks (for there are several) enjoying an open exposure are perfumed with roses and correct by a very pleasing contrast the coolness of the shade with the warmth of the sun. Having passed through these several winding alleys, you enter a straight walk which breaks out into a variety of others divided by box hedges. In one place you have a little meadow; in another the box is cut into a thousand different forms; sometimes into letters expressing the name of the master, sometimes that of the artificer; whilst here and there little obelisks rise intermixed alternately with fruit-trees; when on a sudden in the midst of this elegant regularity you are surprised with an imitation of the negligent beauties of rural nature, in the centre of which lies a spot surrounded with a knot of dwarf plane-trees—beyond there is a walk planted with the smooth and twining acanthus, where the trees are also cut into a variety of names and shapes."

Then follows a description of the architectural portion, the alcoves, fountains and summer houses constructed of marble. The gestatio which has been mentioned was a sort of avenue in which the Romans were accustomed to be carried to and fro in a litter by their servants. The hippodrome was an avenue for horse exercise. No villa was of course complete without a vineyard, orchard and kitchen garden.

I have transcribed this letter of Pliny at considerable length because it expresses better than in words of my own the two distinctive ideas which seemed to predominate in Roman landscape

gardening, viz.: the geometric system or set formal plan in which their grounds were laid out, and the topiarian art as it was called, or the custom of cutting and pruning shrubs and trees into all sorts of fantastic shapes. This custom was as universal as it was ugly and was copied from the Romans in the more modern Italian garden.

In the Italian garden, however, much more grandeur was affected than in the Roman. The Italian style delighted in balustrades, terraces, magnificent flights of stone steps, alcoves, niches, lofty clipped hedges and recesses for sculpture. It was an architectural affair.

French gardening was copied from the Italian style and conspicuous for its attempt at magnificence and architectural effort. Gardening in France received but little attention, or at any rate did not approach anything like perfection until the seventeenth century. Although pleasure grounds had before this been formed at Fontainbleau by Francis I. in imitation of those he had seen in Italy.

In the seventeenth century the beautiful grounds adjoining the Tuileries Palace were designed by Le Nôtre. From that date followed the design and laying out of the many beautiful gardens, parks, drives and promenades in which Paris and its environs abound. Sculpture, basins of water and fountains with a profusion of flowers are to be seen on every hand. The Champ d'Elysée with its trees, fountains and parterres of flowers was for a long time the pride of Paris. But with the laying out of the Bois de Boulogne, the boast of Napoleon that he would make that great metropolis the most beautiful city in the world gave promise of fulfilment.

Dutch gardening was in some respects an imitation of the Italian but without its magnificence. There was the same stiffness and whimsicality or perhaps an exaggeration of it, while they followed the same barbarous topiarian custom of pruning trees and shrubs. They also attempted ornamentation by water, intersecting their gardens with canals. But these canals being filled for the most part with stagnant water renders the effect anything but pleasing. But though little can be said for the taste of the Dutch in the arrangement of their gardens they excel in a knowledge of horticulture. They are especially devoted to the cultivation of all the bulbous plants. In the seventeenth century an insane rage took possession of them for the cultivation of the tulip—to such an extent was it carried that it was named tulipomania—fabulous sums were asked and received for single specimens of this gaudy flower and fortunes lost and won in speculations upon them.

I have thus briefly noticed, though not in chronological order, for that would be hardly possible, all those nations, ancient and modern, chiefly noted for the practice of the horticultural art; and the distinguishing features of their gardening; until we come to England from which nation we have most closely copied and where we find the nearest approach to perfection in taste.

I recognize the force of the maxim "de gustibus non disputandum," there must be no dispute about taste. And yet there are certain elementary principles upon which all good taste is founded about which there can be *no* dispute. One is that the best taste is always the nearest approach to nature. "The ranunculus glacialis," says Ruskin, "might perhaps by cultivation be blanched from its wan and corpse-like paleness to purer white and won to more blanched and lofty development of its ragged leaves. But the ideal of the plant is to be found only in the last, loose stones of the moraine; alone there, wet with the cold, unkindly drip of the glacier water, and trembling as the loose and steep dust to which it clings yields ever and anon, and shudders and crumbles away from about its root." And herein lies chiefly the superiority of the English landscape over the Italian and Dutch styles—the one is an imitation and the other a distortion of nature.

Another test of the purity of taste is its universality. "Hence," says the same authority, "false taste may be known by its fastidiousness, by its demands of pomp, splendor and unusual combination; by its enjoyment only of particular styles and modes of things, and by its pride also, for it is forever meddling, mending, accumulating and self-exulting; its eye is always upon itself, and it tests all things around it by the way they fit. But true taste is forever growing, learning, reading, worshipping, laying its hand upon its mouth because it is astonished, casting its shoes from off its feet because it finds all ground holy, lamenting over itself, and testing itself by the way that it fits things." Judged by these standards we see the progressive nature of horticulture as a fine art.

Many of the fine arts among the ancients, like poetry, oratory and sculpture, scarcely saw an infancy, but sprang like Pallas from the head of Jove into full maturity and perfection. No production of more modern times can surpass the early Hebrew and Grecian poetry—the statues of Phidias are to-day the "Models of all that is noble in expression, elegant in form and chastened in taste," while in oratory Demosthenes will remain alone and unapproachable till the end of time.

On the other hand, horticulture as an art has passed through not only a struggling infancy but a long adolescence, and who

shall say that it has yet attained its majority? Judged by the standards I have named, who can fail to see that by as much as the Roman villa with its formal lines, or the Italian landscape with its architectural accessories excels the gloomy Egyptian plot of rectangular form, with its tanks of water and tufts of papyrus, by so much are the English park, English lawn, and English flower garden a triumph over those.

And it is on the suggestions of the English style that our own horticulture and landscape gardening is for the most part based. Bulstrode and Cobham Hall have been reproduced in the suburbs of Boston and upon the banks of the Hudson.

Nor do we suffer by comparison. It is the judgment of specialists in horticulture—gentlemen of the widest observation and experience,—that for beauty and purity of taste, the ornamental grounds of Mr. Hunnewell at Wellesley are unsurpassed by anything of a similar character in either the old world or the new.

Laid out like an English park with its sweeping avenues and endless vistas of velvety lawns, its rustic arches and arbors curtained by climbing vines, and mirrored as it is in the crystal waters of that loveliest of inland lakes—Lake Waban—nothing in Nature or Art seems wanting to make of this charming spot a terrestrial paradise.

At the last Convention of the National Pomological Society at Boston, a few years since, the members were invited at the close of the first day's session to visit Music Hall. Ostensibly it was to be an Organ Concert, but the members of the Massachusetts Society had prepared for their friends a Horticultural surprise. It was a feast of plants and flowers. Around the entire Hall were arranged in endless profusion the choicest of flowers and most exquisite of trailing vines. Its body was filled with towering palms, foliage plants of infinite variety, and all the rare exotics which the wealth of the tropics could furnish, while the organ was embowered in ferneries, hanging baskets and rustic stands. It seemed as though the greenhouses and conservatories of the whole metropolis, with all its suburbs, had been emptied of their contents to make of Music Hall one great conservatory for the gratification of their guests.

As we stood upon the platform, gazing upon the never-to-be-forgotten scene, beautiful beyond description, a delegate from a distant State, lost in admiration, exclaimed in a sudden burst of enthusiasm, "I tell you Boston is the only city in the world that could do this thing!"

This tribute, coming as it did from no mere tyro, but from a gentleman of extensive travel and the highest culture,—the oracle of his section,—was as significant and just as it was involuntary.

But he might have added with equal truth, Boston is the only city in the world that can boast a horticultural society like the Massachusetts, and it is the Massachusetts Horticultural Society that has accomplished these results.

And may not we indulge in some measure of self-gratulation at the success attending the aspirations and the efforts of our own society of Worcester County? Of the success it has attained in the pomological department in the introduction of the choicest varieties of apples, grapes and pears, the impetus given to the cultivation of the small fruits, of the habits of close observation acquired by its members by attendance on its weekly meetings, the excellence and perfection of fruit attained by growers in their generous emulation for its prizes, the practical and scientific knowledge disseminated by its valuable library and by the annual reports of its accomplished Secretary, each one of them a rare intellectual treat as well as a contribution to literature—of all these it is not my province to speak.

If I have construed aright the aims of the founders of this institution, its mission is largely an æsthetic mission, the creation of the beautiful, the adornment of houses and grounds with those forms of beauty in which nature so profusely abounds, which delight the eye and cultivate taste and elevate character, raising man above the dull routine which a cold formal course of an every-day business life has taught him. That this Society has at least in some measure accomplished these results, let the ever-increasing excellence of our weekly floral displays testify. And let the new forms of beauty our city is taking in every direction in lawns, and shrubberies, and in both its private and public grounds bear witness. And yet it is hard for many to learn the lesson, that the life is more than the meat, that the body is more than the raiment.

To how many of this generation, still uttering the old lament, "what shall I eat and drink, and wherewithal be clothed?" does our Lord's rebuke apply with tenfold force—"Behold the fowls of the air, they sow not, neither do they reap, yet your Heavenly Father feedeth them." "Consider the lilies of the field, how they grow; they toil not, neither do they spin. And yet I say unto you that not even Solomon in all his glory was arrayed like one of these."

This Society has been and doubtless always will be—all societies and all institutions, whether public or private, for the spiritual and æsthetic development of man, always have been and always will be—confronted by the Judas-like enquiry, prompted by the same meanness of spirit: Why is all this waste? Why was not this money given to the poor? Or by the old utilitarian

cry *cui bono?* For what good is it? What is all this worth? How does all this expenditure of time and money pay? As though the habiliments of the soul, the garments which clothe the immortal mind, could be bought with gold! As though the elevating influence of splendid architecture or the refining power of some master-piece in painting or sculpture could be measured by dollars and cents! As though happiness and peace and that intellectual pleasure of the true lover of nature and art could be purchased by even wealth untold!

Why were these powers of the soul given us by our Creator—this love of harmony and sweet sounds—this exquisite susceptibility to beauty in every shape—this desire to reach after those things which are above and beyond our present state of existence, higher and nobler than the dull routine of daily life can furnish? Why should we feel such thrills of pleasure in the contemplation of nice proportions and the delicate arrangements of light and shade? Why revel in the pleasing fictions of the imagination from the pen of the poet or novelist? Why should the laughter of the ocean-wave, the roar of the tempest, the diapason of the thunder, the gorgeous hues of sunset, the incense of flowers, produce within us such alternations of emotion from quiet happiness to rapturous delight? Why were these powers given us unless to gratify and cultivate? And why should man, made but little lower than the angels, created with all these susceptibilities and capable of this infinite variety of enjoyment—why should he make of himself a mere machine, plod on day after day, worship Mammon as the god of his idolatry, pass through this earthly pilgrimage unloving and unloved, and die with no more knowledge of those noble faculties undeveloped in his soul than the merest clod beneath his feet?

God made not man for such a fate. And he who shuts his eyes to all the wonders of art, to all the beauties of the external world, who will not satisfy these cravings of his immortal nature—such a man but half fulfils the great end and object of his existence. He refuses to glorify his Maker by a tribute of praise and gratitude for all these manifestations of His benevolence with which he is surrounded—refuses to employ those means which the Almighty has placed in his power by which he may not only render his earthly life more happy, but better fit himself for an eternal life when this his earthly life shall end.

REPORT OF THE LIBRARIAN.

To the Members of the Worcester County Horticultural Society:

Your Librarian, in the discharge of the usual custom of reporting upon the condition and use of the Library, is happy to say that the Books and Pamphlets are in good order, and none have been lost. The number taken out during the year just closed is 452, being a small increase over the amount reported last year, while the number consulted at the Library is very much greater.

Your Librarian in looking through many of the illustrated works on Horticulture in the Library, has been surprised to see the wealth and beauty of the illustrations, and I am sure that if the members of the Society would acquaint themselves more generally with these valuable books with which our shelves abound, they would be the gainers thereby.

The additions to the Library during the past official year, by purchase and donation, are as follows:—

Hand Book of British Fungi; 2 vols.; with full description of all the species, and Illustrations of the Genera; by M. C. Cooke, M. A.; Society.

The Esculent Funguses of England; containing an account of their classical history, uses, characters, development, structure, nutritious properties, modes of cooking and preserving; by Chas. C. Badham; Society.

History of the Massachusetts Horticultural Society; 2 copies; Society.

New and Rare Ferns; by E. J. Lowe; Society.

Ferns—British and Exotic; 8 vols.; by E. J. Lowe; Society.

Department of Agriculture; 1879; Report of.

The Grasses of Great Britain; Illustrated by John E. Sowerby; Ed. by Charles Johnson; Society.

Elwes' Monograph of Lilies; A Monograph of the Genus Lilium; by Henry John Elwes; a very valuable work; Society.

A general Index of the Agricultural Reports of the Patent Office for 25 years from 1837 to 1861, and of the Department of Agriculture for 15 years from 1862 to 1876; W. W. Rice.

Power and Movement of Plants; by Darwin; Society.

Proceedings of Portage Co. Horticultural Society; Andrew Willson, Secretary; Ravenna, O., 1879, 1880.

Curtis' Botanical Magazine; by J. D. Hooker; 1880; Society.

Transactions of Illinois Horticultural Society; O. B. Galusha, Secretary.

Proceedings of the Seventeenth Session of the American Pomological Society; 1879; Marshall P. Wilder.

Revue Horticole; 1879; 1880; Society.

Floral Magazine; 1880; Society.

The Home Garden; by Ella Rodman Church; Society.

New Book of Flowers; by Peter Henderson; Society.

Transactions of the Massachusetts Horticultural Society; in two parts; 1880; Robert Manning, Secretary.

Vick's Monthly Magazine; 1880; Society.

The Garden; an Illustrated Weekly Journal; 1881; Society.

The Gardener's Chronicle; Vol. 14; weekly journal; 1881; Society.

The American Entomologist; new Series; 1880; 2 copies; Society.

The Agricultural Gazette; London; 1881; Society.

The Villa Gardener; 1881; Society.

The American Agriculturist; Vol. 40; 1881; Society.

The Gardener's Monthly; Vol. 23; 1881; by Thos. Meehan; Society.

The Country Gentleman; Vol. 46; 1881; Society.

The Fruit Recorder; 1881; Society.

The Massachusetts Ploughman; 1881; Society.

Laws and Ordinances of Worcester; 1881; E. H. Towne.

Worcester Directory; 1881; Society.

All which is respectfully submitted.

CHARLES E. BROOKS,

Librarian.

Hall of Flora,

November 2, 1881

ANNUAL REPORT OF THE SECRETARY.

To the Members of the Worcester County Horticultural Society:

Twenty-eight years ago, the actual *President* of this Society; to whom, throughout the whole course of a long and honored life, we have been as much indebted for diligent and untiring service; as for munificence, ample as that was; drawing from the keen experiences of a recent visit to Europe, contrasted the Exhibition of our Society on the 23d day of September, in that year, with shows of a like character which he had seen in England. He took, for an example, the "Horticultural Exhibition of all Nations" at Cheltenham, under the professed patronage of Queen Victoria, Prince Albert, and the Emperor of the French:—

"In addition to a very large hall, there were four tents for exhibition, whose united length was 1300 feet, and the width of the tables was nine or ten feet. Three bands of music, with different instruments, played in turn in the beautiful garden." * * *

"The English show presented a variety of most rare and splendid flowers, in such size and perfection as it is difficult, with any expense, to attain in this climate. Except the Roses, and they were very choice and perfect, and some new and costly Petunias and Verbenas, and a few other flowers not easily to be procured, the flowers were of the kinds cultivated with difficulty and great cost, by artificial heat. The space occupied by the department of Fruit and Vegetables, in this extent of 1300 feet of tent, was not, in my opinion, larger than one of the tables of this hall;—not more than seventy feet.

* * * * *

There was but one plate of Peaches, which were large and beautiful, raised by artificial heat, such as in the month of May were sold in the London market at 10s. sterling, or about $2.50 for each peach."

* * * * *

"I do not remember any Pears at that show, and I saw few in

England. The season was said to be unproductive for that crop. The Apples were few and inferior." * * *

"There was but one plate of Tomatoes and this, in mid-summer, though an excellent specimen, was not better than the box which our Vice-President, John C. Whitin, Esq., of Northbridge, sent to me, and I exhibited extensively to the members of this Society, in February last. The result of the proposed comparison may thus be distinctly stated. The English Exhibition was a display of rare luxuries, which like the privileges of the favored classes in England, are not within the reach of the great body of the people."

Doubtless the Foreign Exhibitions have been developed in extent and variety, as well as in the interest of popular instruction. But it may well be assumed that our own Society has kept more than a measured pace with that advance. Certainly, within the last two (2) years, the progression has been rapid, and marked, beyond precedent. I attribute this throbbing vitality—which animates your associated action, to the policy adopted by your TRUSTEES, not so long since, of regarding excellence as a *sine qua non* in every and all articles submitted for competition and official approval. Mechanics Hall has been found too small for your contributions, when your ranks were less numerous, and the state of public affairs was not especially propitious. At present,—you could easily fill the Rink to repletion, without Orchard or Garden betraying any deficiency. It has been your wise election to do better. And yet,—although your weekly schedule was limited to perhaps a dozen specific articles, the Hall of *Pomona;* larger than when the *senior* Salisbury delivered that address; has proved almost inadequate for the recurrent displays, and their constantly swelling throng of admirers. That matters are managed somewhat differently, at present, even in conservative England, may be inferred from the following remarks of a close observer and unsparing judge,* who nevertheless leaves room enough for a suspicion that further improvement is still possible:—

"For a well-managed Horticultural Society is not a grand patronage affair of marquees and elephants, big prizes and military bands, wet days and financial collapse; but a broad-based, economically-managed

* *Garden, The.* Aug. 13, p. 211.

institution, whose sole aim and effort should be to engender and promote a genuine love of gardening: regarding the Annual Show as merely an imperfect exponent of the work done, and not as its sole aim and purpose. Successful Horticultural Societies do not depend so much upon the length of the subscription-list as upon the *bona fides* of the Officers and Committee. Permanent success is not to be gained by the spasmodic efforts of people whose only motive is glory, or four-penny bits."

That was somewhat of a random stone, yet it cracks glass across the Atlantic. The *Chairman* of the Floral Committee, ignoring the marquees and elephants, yet retains visions of Rinks and Electric Lights;—of a darkness alike palpable or visible, and of a heat indisputably infernal; of gold medals for instruments evoking aught but harmony; and of a male rivalry wherefrom the element of good breeding was painfully lacking. His apology for getting mired in that morass,—holding the official relation to you that he does, may be summed up briefly:—loyalty to a friend who was true as steel in time of trial; and an inexhaustible willingness to spend, and be spent in the service of Worcester—City or County. But—those "wet days" and the consequent "financial collapse"! is it prophecy?

Advance our standards! is not simply a poetic phrase: but rather an injunction, or *mot d' ordre*,—which flies along the ranks, inciting each to do his utmost, to gain and uphold a worthy position. If those of you who visited Boston, upon a recent memorable occasion, were surprised, it could not have been with any painful emotion. For now you cannot help but know and realize; what I have so often insisted upon in these Reports;—that Worcester can grow as goodly a crop as any garden since Eden; that her soil is still fecund; and that her yield is exhaustless:—whether the demand is to fill the halls of State with Judges or Governors, or exacts that more beneficent harvest of Flower, and Fruit, wherewith a bounteous Nature maketh glad the heart of man. In whatsoever we are inferior, it will be our privilege to supplement deficiency: but, at present, the members of this Society may well decline to concede to any, a position of superiority, as sincere and successful votaries of Ceres, Flora, and Pomona.

And why should we not take and maintain the lead in the

Horticultural race? The unwasted vigor of youth is with us; and the flame of emulation burns, it may be, perhaps too brightly. The City, it is true, keeps growing: but the country is not yet so far repelled, that distance and time are factors to be computed in estimating our chances. The venerable MASSACHUSETTS SOCIETY labors under some disadvantages; at present weighty, and, in the nature of things, sure to prove more onerous; from which we are likely to be exempt. For unless Worcester shall attain the magnitude of Boston,—the time is in the dim future when the Halls of this Society shall not be accessible from Gardens and Farms, if not immediately contiguous, yet but a short and charming drive distant. Veterans of the MASSACHUSETTS SOCIETY have confessed to your *Secretary* that they could discern but slight prospects that their places, in the order of Nature soon to be vacated, will ever be filled. The eager attendance upon our Exhibitions of the last two years; so much animated by youthful ardor; dispels from my mind, at least, any similar apprehension for the continued welfare of this Society. Should it, at last, after an honorable rivalry, be our proud fortune to achieve the first place; as the second has often been conceded by an authority from which there can be no appeal;* our friends, who will simply not have retained the lead, may find partial solace in the lines of the poet:—

> "To teach his grandchild draughts then, his leisure he'd employ;
> Until, at last, the old man was beaten by the boy."

And as much in the reflection that Elijah did not drop his mantle—on a descending grade: nor, at all, until a worthy successor was found.

But just at this hour of writing, as in the Autumnal Æquinox the natural equilibrium is jostled; and, amid hurricane, drought, with fierce conflagration, man begins to mistrust the Promise that "seed-time and harvest shall not cease" the tolling bell and dull boom of artillery startle our ears, warning us that fruition again disappoints—that the fairest hopes of a Nation are once more blighted. The growth may be symmetrical;—its development from one year to another stately and tall;—until, at last, when

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* Marshall P. Wilder.

we anticipated with the completest assurance protection and shelter beneath its spreading branches or beside its massive trunk; it falls! stricken at the root by something beyond our calculation of probabilities—so inconceivably despicable is it—so foul and loathsome! The parallel comes home to us—Horticulturists. Yet, by whatever light it may be viewed, the lesson is always the same.

"Whatsoever thy hand findeth to do, do it with thy might."

"In the morning sow thy seed, and in the evening withhold not thine hand: for thou knowest not whether shall prosper, either this or that, or whether they both shall be alike good."

In the remoter centuries, thus spake the Preacher. For well nigh Forty Years you have followed his instructions. As citizens,—or associates of this Society,—what better can you do than to adopt them as your guide through remaining life?

"Would it had struck me instead!" was the outcry of that son of thunder *—our own Boanerges,—as the lightning from heaven shivered the dying Oak before his very door. Did he not do it with his might? With his hand to the plough,—when was he known to turn back? The inwrought convictions of himself, and of men perhaps similar yet not actually like him; leavening the whole lump; made it possible in this Republic to have a President worth choosing. Without his active career, and that of those his first fierce adversaries and subsequent disciples, it is doubtful if we should have had, for many another dreary year, a President worth lamenting. True and thorough: when his life-work was done; though he would never own it—possibly did not see it; he became almost as devoted, in more placid days, to the work which is so usefully prosecuted in these Halls. Apt,—as diligent, to learn; he was always cheerful to instruct. Ready to advise, if solicited; he had also the infinitely rarer quality of being a patient listener.

In these sere days of Autumn, this chaplet is laid upon his fresh grave by one who seldom agreed with him in opinion upon public affairs; but who had learned, amid the conflict and

* Stephen Symonds Foster.

storm of political passion and prejudice, to estimate and duly prize the rugged tenacity and sturdy uprightness of—possibly the Last of the Puritans.

"After life's fitful fever,—he sleeps well."

The development of the STRAWBERRY market, throughout the City and County of Worcester, has continued with, if possible, accelerated momentum. Whether as much has been gained in the production of better varieties,—or in widening and deepening the knowledge of methods of improved culture,—may be doubted,—*with emphasis.* This latter statement can be modified, perhaps, if demonstration shall crown audacious experiment; and success result from the problem now on trial at the base of Newton Hill. But the Goddards did succeed along the newer Holden road; and there should be no insuperable obstacle to the triumph of a similar enterprise, on a far larger scale, when undertaken by *the* "Sovereign of Industry."

Yet, with reference to varieties, what real advance has been made? The *Charles Downing* is even more generally approved: but it has been known, and commended, for years. Its wider acceptance only goes to show that the common vision is clearer,—the public appreciation more acute,—than in the days when the *Wilson* was esteemed good enough for that pet and pride of Massachusetts Ornithology, the *Turdus migratorius.* We have now, it is true, an endless list of recent seedlings; tested by our vigilant members who would have the most prolific; without objection to quality, if combined with fecundity; and who, to that end, feel obliged to "prove all things." Might they likewise—"hold fast to that which is good"!

Your *Secretary* sometimes gets discouraged as a preacher of the true evangel. He remembers, however, that, in days of yore, he once or twice essayed the political conversion of the sturdy Free-Soil dogmatists of Worcester,—City and County,—to the use of the pure milk of grade-Democracy. What then if he now fails to persuade you that everything which is novel in Garden or Orchard;—and proclaimed to be the one thing needful, by those who get gain from the blowing of rams' horns; is not inevitably, nor necessarily, an improvement upon the old?

MASSACHUSETTS AGRICULTURAL COLLEGE.

What berries were shown, A. D., 1881, that surpassed, if they equalled, those superb specimens of *Triomphe de Gand* which our honored associate—the late Charles Richardson—first, and so repeatedly, commended to your notice? Of that foreign variety which, in the Pomological Catalogue is so widely starred, Mr. F. M. Hexamer said, at the recent Session of the American Society, that "he considered it one of the finest shipping varietiet of Strawberries in the world. He thought growers, in selecting varieties of Strawberries to be shipped, should select those of a firm texture," &c., &c. Yet not a quart of the *Triomphe* was visible, this Summer, upon our tables. Take, as another illustration, the Jucunda! so prolific and thrifty along Olean *Street;*—yet which is but sparingly tested, elsewhere, in the City. Can there be found—can one of you name? a better Strawberry;—one of firmer texture, more shapely form,—one cleaner or handsomer? But you say that you cannot succeed with it! Have you ever tried its cultivation in hills,—in suitable soil—with proper care taken of the plantation? If yes,—and you then failed, you did right to search for something better adapted to your peculiar, local conditions.

I would be the last person to advocate, or use, a road *because* of its ruts. It is the old road,—*Via Appia*,—well-built,—built for all time,—over which I would have you travel oftener, even though you may occasionally profit by a short cut. It was not bad counsel to be off with the old love before you are on with the new. Those who grow Berries, or any other fruit—*to sell;*—find it imperative to try each and all the novelties that are introduced. If a genuine prize is sometimes discovered; more often the stranger turns out to be an old acquaintance,—newly christened. But this Society does not consist solely of those who grow fruit for the market. The majority cultivate a rod or two for private consumption; and lose nothing if they fail to achieve,—because not tempting,—Fortune. For all such—experiment is worse than idle: the tests were made long since. They may amuse themselves in developing new kinds from the seed:—possibly, like the tyro at gaming, profit by a lucky chance. But it will be chance! For who can enumerate the myriad disappointments that have clouded the origin of the

universally approved varieties which may almost be counted upon the fingers of one hand?

Can Strawberries be grown for the market, at a profit?—in this City and its vicinity;—is a question mooted as often as the leisure of Winter loosens the tongue. That some of our members believe their cultivation to be remunerative, cannot be doubted by any one who has kept his eyes open, as he traversed Park Avenue; or three at least of the countless roads to Holden. But have any—the most enthusiastic of our local Fragarians,—the assured faith and easy contentment of that facile writer and most extensive grower of small fruits,* in Western New York,—who declares that so long as he can get ten (10) cents per quart for Strawberries, he will continue to produce them, and make money at that? Supplied at any such rate—who shall put a limit to the consumption? Who will buy corned beef, or even porter-house steak,—in the torrid days of June,—when a quart of first-rate Strawberries can be procured for the same or a less sum? He is the truest Horticulturist who shall first demonstrate the fact that this delicious fruit can be afforded thus cheaply. For he will have brought a health-giving luxury within the reach of the very poorest among us; supplementing the meagre list that so quickly expresses and exhausts the capabilities of our wretched American dietary with the choicest of all viands. And, all the while, growing no poorer in purse.

The fruition of the *Peach* crop, A. D. 1881, scarcely equalled the promise held out during the preceding year. There was no single plate of specimens to rival that noble lot of *Early Rivers* from West Boylston; and the Yellows had finally disposed of two or three hap-hazard seedlings, of a flavor to justify the flourish of trumpets wherewith they were introduced. Others, of perhaps equal expectation, have succeeded to their place. And your *Secretary* is as thoroughly convinced now, as he was prior to the advent of the Yellows, or to the lethal frost of A.

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* Mr. A. M. Purdy, of the *Small Fruit Recorder.*

D. 1860–1, that better Peaches* can be grown in Worcester County than in Delaware or New Jersey;—can be grown with as much certainty, and with the absolute assurance of a ready market for all that are not wanted at home. Since home appetites, at home firesides, should first receive consideration.

Of course there will be failures. Some will plant trees whose latent unsoundness cannot be detected until after the lapse and loss of years. Many will be induced to set an orchard in the first spot that comes handy; ignoring, or scorning the knowledge that there is a place for all things: and that the exposure and soil which best suit the Strawberry, or Pear, are not necessarily as well adapted to develop the *Peach*. Temperature;—the direction and force of the winds at the period of inflorescence; nerve to withhold the pruning-knife and saw; (the besetting sin of the average Yankee being, to abuse a sharp tool whenever he gets hold of one;) each and all are conditions to be weighed in the location and after-care of such an orchard.

We cannot, indeed, overlook the fact that much of our land has been cultivated so long, that many essential elements must be, in great measure, lacking. Yet, as new *genera* succeed, after the felling of an ancient forest, flourishing with equal vigor; so do we find an order of profitable sequence in the production of field and orchard crops. It was wisely ordered that monotony should discourage, by poor returns; as well as offend the taste from very sameness. There are hill-sides, and pastures, in plenty,—upon which chestnut-burs no longer prick the chubby-fisted urchin; from whose slopes the White Pine was long since hewn, shaped, and sunk!—in First Mortgages or Preferred Shares. *There*,—might be the habitat of the Peach:—of the Apple! if you prefer that sturdy old friend, whose past is known of all men that ever enjoyed a New England home; and whose future should expand and strengthen with the growth of that foreign trade over whose threshold we have barely stepped.

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* The *Secretary* is too modest, by half! Why does he limit his claim to Peaches? Worcester County is the home of the Apple,—largely the place of its origin. The Sterling; Sutton Beauty; Leicester Sweet; Worcester Spy; Mother; and Hubbardston Nonesuch constitute a list that may well challenge supremacy, if it does not defy competition. E. W. L.

As I look around this Hall, and upon this audience, I can but sadly realize the changes which the seasons have brought, with their inexorable recurrence, during a generation that has passed away. Of Thirty-Five (35) contributors, by whom Ninety-Two (92) plates of Peaches were shown, A. D. 1853, but Two (2) were represented in any, the least degree, at your Weekly Exhibitions throughout the year just closed. A. D. 1856, three years later,—One Hundred and Fifteen (115) plates of Peaches were placed upon your tables by Thirty-Three (33) contributors. Our esteemed associate, from West Boylston; and our Junior *Vice-President;* out of that number, are all to whom we have been indebted for evidence of unflagging interest in the Summer of A. D., 1881. The men,—our valued friends,—have left us: but,—by their fruits, we still know them. For the varieties which they cultivated are yet grown, from choice: and *Cooledge;* the *Crawfords;* with *George IVth;* gratify the palate, as they commend themselves to a more modern and fastidious judgment. *Crawford's Early*, and *Late*, *Melacoton;* as they were styled in our earlier Transactions, upon their first introduction; were rich repayment for whatsoever trouble their origination cost. Only in the same way,—by sowing the pits of choice and healthy varieties,—can we hope to produce kinds that shall be named for us and endure after us. A majority may be worthless: but, if we can originate a Peach like the *Cooledge*, will it not be ample remuneration, of itself To sow and to hybridize! the lesson which Nature is constantly teaching us: as it is the early, the uniform, and the latest injunction of Marshall P. Wilder, in his advocacy of new and suitable fruits for the American Continent. To that laudable end, shall not each of us contribute some portion of sustained effort and energy?

A. D. 1880, Apples could scarcely be given away. During the present season they have been in scant supply for the baby of the family. Those *Gravensteins* and *Porters* that come so handy in the forenoon, as a half-lunch; that are indispensable, after dinner, to those who have once tasted them; and which are never base metal, notwithstanding the proverb, at any hour of the day; are conspicuous by reason solely of their absence. Without *Rhode Island Greenings*, or even *Baldwins*, the pros-

pect for Thanksgiving pies is forlorn enough, while that "delicious maid" must perforce seek the initials of the coming man through some readier response than she is likely to extort from a casual involution of the paring. Yet, there may be a compensation. The overburdened trees are resting, as well as storing up vigor for the crop that may be calculated upon, with reasonable certainty, in the course of the next even year. Shall that crop, if permitted to be excessive, be wasted, like too many that are within memory? Or rather shall not the Horticulturist control this drain upon fecundity, by regulating its exactions, thinning out poor and more especially superfluous specimens? And inflexibly adhering to a fixed purpose of putting a limit to the yield of each tree in the entire orchard? Will it require too much labor? Possibly, if that labor is not remunerated. But has any one present ever tried the experiment, for a series of years, so as to determine, with absolute assurance, what effect, if any, such heroic treatment would have upon an orchard? The writer has gathered ten (10) barrels of the Baldwin from a single tree; a yield which is often exceeded. Suppose now that one-half of that crop had been picked, shortly after they were formed! Does any one doubt that the select remainder would have filled as many barrels; would have drawn, perhaps, as hardly upon the vigor of the tree; but still, through superior size and enhanced conditions of flavor and form, would have commanded a higher price in the market! Suppose, however, yet further, that the yield were restricted to what the tree *ought* to bear; and who ever had, or will have the courage to thin to that extent? have you not faith that a demand would arise where none existed before; and that the very tempting appearance and evident high quality of the specimens must attract and secure purchasers? What return do you expect from an acre of land set in Apple trees? Has pomological covetousness no other limit than that

> "They shall get who have the power;
> And they shall keep who can?"

Will not one dollar per barrel, net, pay a fair return, should you get five (5) barrels from a tree? But if, contenting yourself with a less yield, of still improved quality, you could manage to obtain such a return each, instead of every other, year, can you

derive an easier or better livelihood from the ensilage of Maize, or a pedigree in direct descent from *Eupidee* or *Maximum?* Compute the proper number of trees to the acre* and you have the sum to answer for itself.

And, with the stern compulsion of necessity constraining us have we,—as Horticulturists,—any alternative? Is it not already manifest that a market exists for the entire produce of our orchards, on condition only that we will earn and merit confidence? For your inspection at leisure, and that you may duly appreciate the opportunity which the orchardists of Worcester County may take at the flood and follow on to fortune, I have collated the subjoined tables from the London *Garden;* asking you to mark especially the absence of certain varieties, from these tables, like the *Hubbardston Nonesuch* for example, that might seem to be of the first value for commercial purposes; and the undue prevalence of others to which here, in Worcester County, we attach little or no value:

Apples—Exportation during nine one-half ($9\frac{1}{2}$) months, from August 1, 1880, to May 14, 1881.

From New York	barrels	599,200
" Boston	"	510,300
" Philadelphia	"	9,872
" Montreal	"	145,276
" Halifax	"	24,250
" Portland	"	39,908
" Annapolis	"	20,000
		1,348,806

Between the 15th and 22d days of December, A. D. 1880, there arrived at Liverpool 27,785 barrels of apples. To the middle of May, A. D. 1881, there had been received, at that port, the enormous aggregate of 692,550 barrels against 240,550 in the year 1880. Now you will be curious to know what return they made after travelling so far. The prices current for different varieties, January 1st, A. D. 1881, were thus stated:

*At a distance of thirty (30) feet between the trees there could be planted: Imperial acre, 48; Scottish acre, 60; Irish acre, 79 trees.

	American.		Canadian.	
Newtown Pippin,				
Good to fine,	15s 0d	28s 0d	No Quotations.	
Ordinary to fair,	8s 8d	14s 0d	0s 0d	13s 6d
Baldwin,	9s 0d	14s 6d	13s 0d	17s 6d
Greening (R. I. [?])	9s 0d	12s 6d	15s 0d	16s 0d
Russet, (Roxbury [?])	10s 6d	13s 0d	13s 0d	15s 3d
Golden Russet,	12s 6d	14s 3d	16s 0d	18s 3d
Spitzenberg,	12s 9d	13s 6d	14s 6d	16s 9d
Seek-No-Further,		11s 6d	14s 6d	17s 6d
Lady,	18s 0d	34s 0d		
Vandevere,	11s 6d	14s 9d	0s 0d	18s 3d
King of Tompkins Co.,	0s 0d	0s 0d	0s 0d	18s 6d
Northern Spy,	0s 0d	0s 0d	13s 9d	14s 9d
Canada Red (Nonesuch),	0s 0d	0s 0d	17s 0d	17s 6d
Phœnix,	0s 0d	0s 0d	17s 3d	18s 0d
Pennock,	0s 0d	0s 0d	0s 0d	0s 0d
Swaar,	0s 0d	0s 0d	0s 0d	14s 0d
Talman Sweet,		12s 0d	0s 0d	14s 0d
Twenty Ounce,	0s 0d	0s 0d	0s 0d	0s 0d

Mark how justly Pennock's Red Winter is valued and then calculate—the privilege of every Yankee with a *pedigree !*—whether or no the *Lady* Apple can be grown in Worcester County and laid down in Liverpool for from four (4) to eight (8) dollars per barrel. There is no law to prevent your exportation of other varieties ;—such first-rate and good keeping kinds, for instance, as the *Hubbardston Nonesuch* and *Porter*. Receipts for home-made pies, as well as for long and short sauce, would add little to the charge for freight, and would be a handy thing in the home of John Bull who has behaved, *for him*, unusually well of late ;—not even obstructing our catch for fish-balls.

Five months later, when the supply must have been restricted to what stock had been kept along in cold-houses ; the chances of decay during an ocean voyage, throughout the vernal months being too great to risk ; the quotations in Covent Garden betray marked appreciation. I would simply say of one variety—the *Romanite*—held at 18s 9d, that if it is what was known by that name, along the Ohio River, forty years ago, when and where your *Secretary* first and last saw it, no member of this Society would tolerate it in his orchard. But, you await the figures !

American.			Canadian.	
Newtown Pippin,	12s 9d	24s 6d	16s 0d	20s 0d
Baldwin,	14s 0d	18s 6d	15s 0d	21s 0d
Greening,	11s 9d	14s 3d	15s 3d	17s 0d
Russet,	14s 0d	18s 0d	16s 9d	26s 6d
Spitzenberg	16s 0d	18s 6d	16s 0d	23s 3d
Spy, Northern,	14s 0d	16s 0d	16s 3d	19s 3d
Seek-No-Further			16s 6d	20s 0d
Russet, Golden,	19s 0d	22s 0d		
Romanite,	18s 9d			
Phœnix,	16s 0d	18s 3d		
Canada Red (Old Nonesuch)	18s 0d			

This, upon May 21st, A. D. 1881.

The whole aim and tendency of this Society, more especially during the last decade, has been in the direction of quality, as opposed to quantity. To that end, we discarded generalization, preferring rather the distinct species within which we would choose that comparison should be restricted. Each variety has stood upon its own merits, if any it had, and the perfection of the specimens became, as it should, the sole test of pre-eminence. Baldwin was contrasted with Baldwin, and not with Pennock's Red. In short, ploughing was no longer done with "an ox and an ass together."

Nor were imperfections tolerated, as a rule. Wormholes; specimens, perfect save from the casts that alone gave outward indication of ravage; knurly, or cracked, as many varieties appear to be, in recurring seasons, without evident prevention or remedy; all have been deemed fatal defects and, as such, incurred the just penalty of inferiority. So that now a premium won, in our Society, means actual desert:

"Palmam qui meruit, ferat."

Is not excellence everywhere appreciated? Do you suppose that John Bull—stolid as he is assumed to be—attained his place at the head of the commercial world because he did *not* know how to transact business? Think you that shoddy is an American monopoly, or that only Yankees can properly do what is attributed to *Deacons!* To show that the careful selection of sound specimens, from the best varieties, would meet with its due reward, let me adduce the opinion of Mr. Walter Draper, of

Covent Garden, London,* to whose firm most of the apples going to the London market are consigned.

"He says that there would be no objection whatever to the apples being classed, and that sales could be readily found for more than one class, but that the ones, twos, and threes, should be rigidly and conscientiously separated, and kept so in the barrel." * * "Speaking of the state of the packing of the immense number of apples coming from America, during the past season, he referred to the great loss and disappointment incurred from bad packing, brands found to be deficient in that way being evaded by the purchaser. The Canadian apples are much better."

There can be no valid excuse for the improper packing of fruit, whether for exportation or storage at home. The only plea in abatement may be—a saving of elbow-grease. But to this comes in the inevitable demurrer that the lubrication of the pocket nerve is thereby rendered uncertain. Men will toil, year after year, throughout the sweltering heat of Summer, to secure a ton of hay from an acre of ground. Let them have forty (40) apple trees upon the same amount of land, and they would esteem themselves ill-used were they reproached for not taking proper care of them. Yet the excessive crop might be thinned, at the pleasantest season of the year—a labor in which children could be trained to be particularly useful. Nor would it appear to be a great hardship to gather the mature harvest during an Indian Summer. It is doubtless true that the orchard cannot be the sole reliance of our Terræ-culturists. They must live by everything that the earth can be coaxed, or coerced, to yield.

"And the earth brought forth grass, and herb, yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind; and God saw that it was good."

Worcester County is a good place to live in:—there can be found, in the wide world, none better. But it is no land of tropical profusion and, as well, tropical shiftlessness. It requires some vexation of spirit to wrest a livelihood from our rugged soil; and therefore it is that diversities of cultivation and of crops should be welcomed, and new markets discovered, to be thereafter retained. There ought to be no limit to the demand for

Garden, The, p. 592, June 11, 1881.

our *Apples and Pears*. The world is ransacked for new varieties of the Orange—unquestionably more palatable to us because we cannot grow it at home. Why should not the products of our orchards be equally desirable, in climates where, from extremes or vicissitudes of heat and cold, they have been proved of difficult or impossible cultivation ?

It is to be regretted that our *Premium Schedule* exacts such frequent revision. *Stare decisis* would be as sound a motto for such documents, as for the more rigid mandates of the law. But therein lies the problem, always vexed and, as would seem at times, of almost hopeless solution— *What is decided ?* After long conference, and comparison of views, we entered upon the official year that has just closed so prosperously, with confidence that, at last, something like absolute assurance was attained. The very first Exhibitions demonstrated the fallacy of such hopes; and rendered it even surer than skepticism had predicted, that, so long as men are of such different minds, no single acceptation of even the clearest phraseology can be expected. Of course, there will be some who incline to cavil, even as the sparks fly upward, and whose casuistry is inspired by all the ardor of selfishness. Their name is not, however, Legion, and their number is far exceeded by the roll-call of the honest majority, whose doubts are entitled to the respect ever accorded to sincerity. Our holy religion was to the Jews a stumbling block and to the Greeks foolishness. How then shall a mortal committee, without the gift of tongues, expound to the satisfaction of all the distinction of varieties that are often, to themselves, without essential difference—*Ομωνσιαν* for *Ομοιονσιαν*—salvation contingent upon a vowel !—or make manifest that the call for Flowers, *Seedlings of 1881*, is not fairly answered by the display, at the end of July, of blooms from plants that were forced under glass !

Take this very instance of a call for varieties : can it, by any possibility be productive of accord or satisfaction ? Just reflect upon the almost infinite number into which the sub-divisions of species degenerate and are lost, and behold ! the difficulty. As of yore, in your classification of Fruit, when sweet was contrasted with sour, the boast of Summer with the cull and pride of

Autumn: you have to compare flowers which resemble each other in nothing:—without contrasting or even salient features wherefrom to frame a scale of pre-eminence. It might be far more to the purpose, as it would be much more practicable, to call for stands of distinct species. If you had them not, you could procure them and, sooner or later, achieve the prize. And then there would be diversity enough to save contributors and committees, alike, from mental perplexity and worriment. At present, the great trouble about the varieties is, that they do not vary! Take a stand of *Late Phlox*, for example, on the 22d of September, ulto., with the contents of seven (7) bottles, out of forty (40) identical. Scattered throughout the collection, it is true, for effect, in a sort of irregular skirmishing line, but yet all of one and the same variety. If you will determine that *duplicates* shall not be allowed, hereafter, in any case, a great part of the present causes for embarrassment may be avoided. That is the course which an honest ambition to secure the best displays would suggest, and it is a rule which your *Floral Committee* for A. D. 1881, are unanimous in urging for adoption. While a thing of beauty may be a joy forever, it should not be overlooked that there may be too much of a good thing; bulk and loveliness being scarcely convertible terms.

With reference to the common practice of holding a court of review, after the decision of Committees, because of individual disappointment, it may be worth the while to occupy a moment. Let the Exhibition of July 28th furnish an illustration. Upon that occasion your *Trustees* offered three premiums for Stands of "Cut Flowers," explicitly requiring them to be "Seedlings of 1881." The obvious and natural meaning of the requirement would appear to be, that the flowers shown must be grown from seed sown in the open ground—*en pleine terre*—as our Horticultural *confrères* in France would say, and during the current year. Why else wait so long? If a seed will not germinate and develop before August, when will it? Apples, Peaches, and Pears, bud, blossom and mature; and the *Early Harvest*, *River*, *Doyenné d' Ete*, with an occasional *Citron des Carmes*, have crowded your tables in profuse succession, ere the advent

of the Dog Star with its baleful gleam. An honest purpose conceals no furtive aims. Your *Committee* did not doubt that the germination and growth of plants might be accelerated by artificial methods. They simply decided that the employment of such methods was not within the contemplation of the TRUSTEES when the schedule was adopted.

The London *Garden*, of July 30th, ult., published, as you will observe, within two days of the date when this question arose among ourselves, referring to a superb dish of Gloxinias, quotes from Messrs. *Sutton*, the *Florists* who displayed them, as follows:

"We always treat the Gloxinias as annuals, that is to say, we sow the seed in January, and toward the middle and end of June we have well established plants with several flowers on each such as those sent you. These plants seed and form good, sound bulbs the same season. We thus produce seed and bulbs in one year, instead of sowing one summer for flowers the following summer, and we save, of course, the trouble of one winter's storing."

"We treat them as annuals"—which tells the whole story. Whatsoever may be done with the *Aquilegia*, *Sweet William*, or *Hollyhock;* call them biennial, if you choose, and not inquiring whether they can be forced into premature activity; we have for our own purposes, as Florists, compelled the Gloxinia to mature in the same season that the seed was planted. Your *Committee* concluded that the TRUSTEES had no ulterior purposes in view; that "Seedlings of 1881," was an honest phrase, with no latent interpretation; and that a frank invitation to all involves no lurk ing snare for one. It is matter for regret always, when individ ual measure of its own desert outweighs the general estimate. It was the misfortune of the fly not to calculate with greater precision the momentum of the cart-wheel. Entering upon this, the Forty-Second year of a prosperous, and, may we not claim? a beneficent existence, the WORCESTER COUNTY HORTICULTURAL SOCIETY may hope to survive the chilling influence of chagrin, from those who should know better, or the open manifestation of pique, in cases whereof, so far as this Society is concerned, the least said the soonest mended.

"Where ignorance is bliss
'T were folly to be wise."

Another curious idiosyncrasy has developed itself within the

past twelve months. The *Committees* have completed their tasks and the public are admitted. Do competitors ascertain the awards—acquiesce—and cordially admire the display made by each other? Such may be the fact in rare instances. But how is it with those who, finding that the first premium has been awarded to their rivals, do not thank the Olympian Jove that Sparta has worthier children than themselves! Who even assume to call the committees to account, as though the best premiums were their especial, indisputable perquisite? whose wanton with-holding or non-award involves flagrant injustice to the Society as well as to themselves! Tradition assures us that such persons have existed; and Science, in its record of the precession of the equinoxes tells us that the laws of Nature abound in repetition. Trials by jury are not always satisfactory. But appeals to the mob are more senseless, and carry with them less consolation than an invocation of the Goddess of Un-Reason. The judgment of the tribunal is not invariably approved: but chronic discontent is transparent, and its motives are ever accredited with the selfishness that is their obvious inspiration.

Your TRUSTEES have ordered that Flowers should be displayed with their own foliage. That rule is so eminently proper that the Floral Committee of the *New England Agricultural Society*, last September, instructed their *Chairman* to advise its adoption at any future exhibition in the Rink. Might it not be well also, now, to determine in advance to what extent Art, or artifice, shall supplement Nature! Whether, in short, to scrimp material, or in its default, wire may be substituted for the stalk or stem of flowers when cut. If you should conclude that this trick of the Florist, who reduces the bulk of a bouquet at the cost of its life, may be tolerated, you certainly will not sanction the use of such appliances in the arrangement of baskets or other loose floral combinations. Capillary attraction is an essential condition of plant-life, and, without its aid, the bud or blossom, severed from its parent stalk, must quickly wither and die. Suffer Art to foster and develop Nature: never accept it instead.

Your *Committee* would also submit for consideration, by the TRUSTEES, whether it might not be better to defer, as was our

former custom, the commencement of Floral Exhibitions to a later date. They are not strenuous about it, but simply suggest that, held concurrently with meetings for Essay and Discussion, the Exhibitions are relegated to a position of inferiority and scarcely repay their cost. Were they used for purposes of demonstration by practical Botanists, there could be no question of their absolute utility. As it happens, a bouquet is brought in; and now and then a creditable fuchsia or geranium. Should it not receive pecuniary recognition, the committee are blamed for inability to appreciate a modest merit that might as well have continued to bloom unseen. Later in the year, when the Hall of Pomona is literally crowded with deserving articles, the gratuities that were lavished upon the altar of good nature, during January and February, are sadly missed. Our old practice of initiating the series of Floral Exhibitions with a display of *Azalea Indica*, seemed to work well. Possibly Primroses and Hyacinths might anticipate the Azalea by one or two weeks. It will be for the TRUSTEES to determine if anything is gained, by an attempt to combine the visual observation of one thing with mental instruction upon another, that is widely different, if not wholly alien.

The Floral Committee of the *New England Agricultural Society*, of which your *Secretary* had the undesirable honor to be *Chairman*, were painfully impressed by the meagreness, or utter lack, of offerings for many of the choicer species of Flowers. Our own Schedule, great as was the care bestowed upon its construction, was noticeably deficient in that respect. Take, for example, the *Sweet William!* always a favorite; which, latterly, has been invested with a brilliancy and variety of color that might almost challenge rivalry. And then, too, the *Antirrhinum*—or Snap-Dragon! with even greater diversity of light and shade;—ranging from buff to magenta,—and compelling attention were it merely from the peculiarity of its floriage. Three Dollars is the munificent sum proposed, in two premiums, for the best six varieties of the Genus *Lilium!* to whose pristine glory, thousands of years since, the magnificence of Solomon was declared inferior. The Pumpkin Sweet Apple gets as much.

A perfect Schedule may be beyond our attainment. It is worth striving for, however; and the very effort to secure it must be productive of advantage. If a competent sub-Committee could revise the list of premiums as established for A. D. 1881, reporting their conclusions, if thought desirable, to the entire Committee of Arrangements; a decided amendment might be hoped for and, in all probability, realized. Confidence must be reposed somewhere. And you need not go far astray, with the ample ability and experience from which you can select.

And now, with reference to the proper appointment of *Committees* of AWARD;—your *Secretary* desires to repeat advice which is based upon long years of observation. Why should you not choose two persons;—one, and one only, for each, to act upon the respective *Committees* of PLANTS and FLOWERS, and FRUITS and VEGETABLES? The work would be better done;—done more promptly: while your *Secretary*, and *Librarian*, left to their appropriate duties, would yet be able to afford the assistance that is occasionally required in the suitable arrangement of articles. The persons, thus selected to discharge an onerous and thankless task, should be paid a reasonable sum for the time spent in your service. This is a matter that you cannot longer—in justice to yourselves or others—postpone or heedlessly neglect. Gentlemen have purposely refrained from competition in the Floral Department, during the past year, whose earned awards in former seasons were quite considerable. For a competent Judge,—you need and should have an expert and active Florist. In Fruits and Vegetables, you would not require to look far to find one suited, both by long practice and shrewd insight, to meet all the exacting requirements of the position. In both departments,—the advance of the Society has been and continues such that you are in imperative need of the very best talent that you can command.

Not so many years have elapsed since the good taste of our members was rudely offended by the display of what were technically termed Floral Designs. Severe criticism and a more rigid judgment excluded them from our Schedule; and, left without the stimulus of pecuniary encouragement, they have ceased to disfigure our tables. At the Rink, recently, a few

were found, in response to the invitation extended to them; notably a horse-shoe, which met with its proverbial luck. The *Chairman* of the Floral Committee protested, in vain, that the shoe alone was not a type of original design: the opinion of his colleagues concurred against him that the foot in it * must be imagined.

At a late Exhibition of the Horticultural Society, of New York City, a Floral Grand Piano, upon a bed of White Pinks, was the centre of attraction. No envious competitor seems to have thought of the infinite possibilities to be developed from the Harp of a Thousand Strings. There are always, upon such occasions, Mortuary Pillows with their inevitable Requiescat. But why does no one fancy a sweet thing in Coffins! upon a bed of Mourning Bride! Why not idealize a Pyramid, combining in the representation a life-size Mummy recumbent upon the sacred Lotus! Faugh! the whole thing is without meaning and in wretched taste. The evidences of Design are omnipresent in Nature. The work of imitation involves no exercise of genius or originality, and should never be encouraged. Flowers are, of and in themselves, the highest work of Art;—whether you consider the lilies of the field, or those strange Orchids of tropical climes, that are such a puzzle and wonder to the eye. Employ flowers in all their native grace, in whatsoever skill or style of arrangement or combination. But do not entitle distortion symmetry, or resort to the stable or charnel-house for symbols of beauty!

The Trustees, by their formal vote, a year since, authorized the Finance Committee to dispose of such property, including furniture, table-ware, &c., as might not be needed for the use of the Society. Nothing has been done under the sanction of that vote, for good and sufficient reasons. The question arises;—would it not be better to sell all of that property, whether needed or not; supplying the wants of the Society by the purchase of something better adapted to our present requirements and, at the same time, more tasteful in appearance. Our plates are old-

* The foot in it was that of *His Excellency* the Governor of the Commonwealth, who, having stepped upon the horse-shoe, apologized for the *faux pas* with characteristic readiness and grace. E. W. L.

fashioned in form; and cannot compare, for an instant, with the shapely dishes of modern invention and manufacture. Having dispensed with the cumbrous Annual Exhibitions, we should not need the ampler equipment that was essential when we essayed to gather in all the fruit of Worcester County. Our Weekly Exhibitions will increase in magnitude, it is likely: but Three Hundred plates now may do the work that would have demanded as many Thousands, ten years ago. Our apples of gold are not required to be set in pictures of silver. But the credit of the Society seems to render it imperative that the superb specimens of later years should be fairly presented to the eye. Facilities would thus be afforded to exhibitors, who are now put to unnecessary trouble in arranging their articles; and a saving of time might result to the Officers of the Society, that could be employed to your exceeding benefit. We will not, in our prosperity, despise the day of small things; but, when Seckel Pears get to weighing more than a quarter of a pound, on an average; as happened with every lot, at their appointed exhibition; it is pretty evident that the time has come for "old things to pass away, all things become new."

An invitation was early received by your *Secretary*, from *President* Marshall P. Wilder, conveying an official request that this Society would send delegates, in such number as it might elect, to attend the Eighteenth (18) Session of the American Pomological Society to be held in Boston during three days of September. In accordance with that invitation, and pursuant to authority conferred upon him, your *Secretary* in due time issued credentials to the following named gentlemen:

President, Stephen Salisbury, Jr., *Vice-Presidents*, Stephen Salisbury, Philip L. Moen, O. B. Hadwen, and *Messrs.* Francis H. Dewey, William T. Merrifield, George E. Francis, James F. Allen, Charles E. Parker, Alexander H. Bullock, Calvin L. Hartshorn, Frank J. Kinney, John C. Newton, Sylvanus Sears, Henry Phelps, J. Henry Hill, James Draper, William H. Earle, Henry L. Parker, William W. Cook, Charles E. Brooks, Edward W. Lincoln, Frederick A. Blake, Adin A. Hixon, of Worcester; with J. P. Lynde, of Athol; Paul Whitin and George Cruickshanks, of Whitinsville; F. M. Mar-

ble, of Grafton; Joseph C. Lovell, of West Boylston; Newell Wood, of Millbury; Jona. D. Wheeler, and William H. Wheeler, of Grafton.

An agreement with the Boston & Albany R. R. corporation was effected, whereby an infinitesimal reduction of fare enured to the benefit of delegates. Could a large attendance be assured, it was stated that a less price would be exacted. The argument that a less price would, of itself, tend to swell the delegation, met with no response. That great corporation contents itself, as it has perforce been satisfied throughout the Summer, with the meagre portion assigned to it of a six dollar ($6.00) fare to Chicago. It has transported political and religious bummers, pot-house politicians and theological sectaries up and down the Commonwealth for what could be got, and, at this hour of writing, finds it profitable to organize excursions to Boston, upon its own account, at a marked diminution from its regular rates. A half-million barrels of Apples were shipped from the port of Boston during the past year. It would seem that anything which might tend to foster, or stimulate the exportation of Fruit, from the famed orchards of Worcester County, over their especial lines of rails, would meet with prompt recognition from a sagacious management. The late *President* Lincoln—eminent Horticulturist that he was—not being possessed with the devil of "through connections" to Kamschatka or Timbuctoo; and appreciating "terminal facilities," with nothing to send forward, at their true value; was always keenly sensitive to such local possibilities. Meekly grateful for the smallest favors, which we will trust may not permanently impair the semi-annual rate of dividends, let us bear with resignation the assurance that a new and competing line will soon open fresh ways of transit and traffic between Boston and Worcester, and simultaneously, perhaps, eyes that are now wilfully blind.

Your delegates generally express themselves satisfied with their reception and benefited by their attendance. New varieties of fruit were seen, for the first time, by many, which had been brought from afar and, as such, became objects of interest, although unsuitable for cultivation among ourselves. The dis-

cussions at the formal meetings of the Pomological Society, were a source and centre of attraction, listeners deriving pleasure and profit from the frank narration of experiences sometimes similar, but more often foreign to our own. It might be regretted that the delegates from this Society were so diffident of their position, or so chary of imparting the knowledge derived from years of personal labor and rigid trial. In considering "Grape Culture," for example, gentlemen from Boston or its immediate vicinity, magnified or depreciated, exalted or pulled down, in the name of Massachusetts, varieties that some of us, in Worcester, gather fully ripe, every year. Your *Secretary*, not hearing those statements, of course could not essay the correction of erroneous impressions. But he takes this occasion to declare his implicit faith in his own ability to mature perfectly, in the open air, for successive years, with as much certainty as the Pear, the *Delaware*, the best of the *Rogers Hybrids*, aye and even the *Iona*. True, some have a sunny exposure throughout the day and are besides sheltered beneath a broad coping that, jutting from the wall, is thus constrained to be of service as well as ornament. Others are allowed and will be encouraged to twine around and over trees, even the *Seckel* pear tree being surrendered to their embrace. None of you can have forgotten the cold—extreme for the early date—which proved so destructive on the 4th and 5th of October ult. Four days thereafter I plucked Grapes—a Rogers—in ripe perfection, and as unharmed by the frost as though the mercury had never indicated a degree more frigid than sixty. Should the *Seckel* finally succumb to the *Lindley*, the dead trunk may be trusted to support the vine. But they are getting along amicably, to all appearance, and there is some ground for the faith that the shade and warmth of the vine leaves exert a reciprocal and beneficent influence upon the pear. The foliage and clusters of the vine vibrate with the passing breeze, and the circulation and currents of air appear to ward off the attacks of mildew, which in the judgment of many, is as much the result of stagnation as of aught else. But then, if you must grow your grapes and pears separately, what can be easier or simpler than to plant trees especially for the support of vines?

Reasoning generally, and as to the sum of advantage to be de-

rived from the Eighteenth (18th) Session of the American Pomological Society, it is believed that your delegates would unanimously concur in and perhaps adopt for their own the conclusions of the Boston *Advertiser:*

"The meetings at Hawthorne Hall have been especially profitable, and will result in promoting the still more rapid development of one of the most wide awake and progressive arts of our time."

At Agricultural Institutes; at the stated meetings of Town Societies; and at every reunion of the local Granges; discussion is th spirit, good or evil, that possesses the occasion. Science and speculation; practice, or theory,—term them which you will; contend, in more or less profitable rivalry, to enlighten or confound the audiences then and there gathered So many and so various have been the themes essayed, that it may almost as well be asked, as it was Two Thousand Years ago,—"Is anything whereof may be said this is new?"

"Threshing that old bundle of straw again!" exclaimed the astute Editor, as the orator designated "Honest," to denote the difference between his fellow-townsmen and himself, brought down his well-worn flail upon the empty sheaves of a Prohibitory Tariff.

"Some brilliant flashes of silence!" said the reverend Wit, summing up in an epigram the unwonted deportment of Macaulay at a fashionable dinner.

"There is too much gab, already!" replied the quiet graduate from Yale, when solicited to contribute for the foundation of a school of Oratory at his *Alma Mater.*

And, to come to the point! are the calling to order; the installation of a Chairman; the formality and starch of a set meeting; listening to what you are told and believing what accords with your previous convictions,—"only that and nothing more"; are these, one or all, fundamental conditions of Horticultural existence? Do not the Summer Exhibitions answer as good a purpose; with their freedom from ceremony or constraint; whereat the tongue wags at will, and people come and go, moving hither or thither at their convenience, as best suits them!

A list of the topics that have been considered, during the last

two or three Winters, is elsewhere given in this report. The great majority were instructive; having been prepared with care and study; and evincing the sound judgment and matured experience which established the fortunes of their authors; constituting them, at the same time, expert witnesses upon the subjects that they were invited to explain before this Society. A few were treated with less precision of statement than we were warranted in expecting. And it is exact information that we crave: of speculation, and inference from baseless premises, there is more than enough. For no silo is yet invented, to provide for mental decomposition and ferment: were such even wholesome intellectual food.

A suspicion has once or twice perplexed your *Secretary*, that gentlemen might anticipate that they were to address an audience from the rural districts; and that elaborate preparation would be thrown away upon fat-witted clod-heads. The frigid response to immature thought, or crude preparation, must convince such, if such exist, that study is a good investment; and one which, sustained by ripe judgment, will never lack appreciation in "provincial" (if that is correct cockney?) Worcester.

Shall those meetings be continued through another season? They are certainly worth perpetuating, if they can be kept up to the standard hitherto maintained. But the Society has a reputation—to lose! and cannot afford to assemble, week after week, merely to advertise those who aim to push themselves into notoriety. Topics of vital importance to the "practice and Science of Horticulture" have been well considered during the last three (3) Winters. It may chance that the supply of themes is not yet exhausted; that essayist and lecturer may still fall a helpless prey to the untiring energy and cunning wiles of our artless *Chairman of Arrangements*. One or two subjects, accidentally omitted or left incomplete, last Winter, might supply a firm foundation whereon to rear a noble fabric of instruction, should it be your ultimate decision to persist. But we must resolve to be content with nothing that does not tend to augment the sum of precise knowledge; not absolutely rejecting hypothesis, but regarding or admitting it solely as a possible method of detecting the true from the false.

Your attention has been invited, in former Reports, to the invidious discrimination against the Real Estate of this Corporation which is practised by the Assessors of Worcester. The *Constitution* of Massachusetts declares that "it shall be the duty of legislators and magistrates, in all future periods of this Commonwealth, to cherish the interests of Literature and the Sciences, &c., to encourage private societies and public institutions, rewards and immunities, for the promotion of agriculture, arts, sciences, commerce, trades, manufactures, and a natural history of the country," &c., &c. In observance of that injunction, the General Statutes of the Commonwealth exempt from Taxation :—

"The personal property of literary, benevolent, charitable, and scientific institutions incorporated within this Commonwealth, and the real estate belonging to such institutions occupied by them or their officers for the purposes for which they were incorporated."

The *Worcester County Horticultural Society* was incorporated, A. D. 1842, "for the purpose," as explicitly stated in its charter, "of advancing the science and encouraging and improving the Practice of Horticulture." From that time to this, it has received legacies and been the object of benefactions from good men and true; of whom some were living when the Constitution was adopted, while all were thoroughly imbued with its spirit; as well as persuaded of the wisdom of that especial provision, just cited, favoring "rewards and immunities" for the promotion of "agriculture, arts, sciences," &c., &c. Yet, throughout the entire period; as soon as, by foresight and thrift, this Society became possessed of a house of its own, wherein the more efficiently to prosecute its "purpose" and thereby justify its existence; its property has been mulcted in sums amounting, at this date, to more than the original cost of our Hall.

In the early Winter of A. D. 1880, the Trustees of the Society arranged a series of meetings, upon successive Thursdays, for the express "purpose" of more effectually "advancing the science and encouraging and improving the practice of Horticulture." Topics of universal concern were selected; and gentlemen, thoroughly informed, were secured to introduce and

elucidate them. To refresh your memories,—a list of those topics is subjoined:—

A. D. 1880.

January	29.	Exhibiting and Judging Fruits and Flowers.
February	5.	Manures and Fertilizers.
"	12.	Growing and Marketing Small Fruits.
"	19.	Window Gardening and Winter Flowers.
"	26.	Out-Door Flowering Plants.
March	4.	Orchard and Vineyard Fruits.
"	11.	Does Horticulture pay? And how?
"	18.	Trees and Shrubs for Ornamental purposes.

A year later, a similar series of meetings was held, whereat the themes assigned for consideration, were as follows:—

A. D. 1881.

January	6.	Birds and Insects injurious to Horticulture.
"	13.	Fruits and Flowers of Tropical America.
"	20.	Chemistry.
"	27.	Roses and their Culture.
February	3.	Orchard and Garden Fruits.
"	10.	Cultivation of Small Fruits.
"	17.	Evergreen and Conifer trees.
"	24.	House Plants for Winter.
March	3.	Æsthetics of Earth Culture.

And, preceding either series of meetings, with their preliminary essays and subsequent discussions, you had procured, and offered to the community, a course of Lectures on Botany, by an eminent Professor in the University at Cambridge, an authoritative abstract of which was afterwards published in your Official volume of Annual Transactions.

During those three years, at least, if at no other period!—years replete with Exhibitions; and affluent with the rare and ripe fruits of learning and scholarship grafted upon experience; were you "advancing the Science and encouraging and improving the Practice of Horticulture?" By accepting your Charter, you took that Trust upon yourselves. If you have discharged it faithfully, and to the best of your ability, your property is exempted from taxation by the Statutes.

The Assessors of Worcester are evidently of opinion that you have not fulfilled that Trust: since they have doomed your entire Estate, which they would not otherwise have done, as

"magistrates" enjoined by the Constitution to "cherish the interests of Literature, and the Sciences," &c., &c.; to encourage private societies and public institutions, rewards and immunities, for the promotion of agriculture, arts, sciences," &c., &c.

Some, who are disposed to concede your right to "immunity," would yet restrict it to the bare Hall of Pomona; as being that portion of the Real Estate of the Corporation which is most largely used for your technical or scientific purposes. But the rest of your Estate is permanently leased, as the whole is occasionally; because your necessities compel: because the rents derived therefrom constitute your only means for stimulating research and rewarding successful achievement; because, if one per cent. can be levied lawfully, one hundred per cent. might be, to the extreme of confiscation:—in that way violating the theory of the Constitution and evading its letter which would "cherish" and protect such "immunities."

I have also, in former Reports, asked you to take notice of an apparent lack of impartiality, on the part of the Assessors, in the allowance of actual exemption from Taxation. It does not appear, from the books of the City Treasurer, that a dollar is received from assessments upon the property of any Religious Society in Worcester. Yet such Societies are notoriously,—even ostentatiously engaged in rivalry with "private societies and public institutions," which have no other resource than their rents wherefrom to supply "rewards for the promotion of agriculture (Terræ-culture?) arts, sciences," &c., &c.; and even maintain kitchens for the pious delusion and snare of the unwary who anticipate, in a theological soup, somewhat more than a gill of oysters to the quart of *water!* Thin! do you say? "Too, utterly, too"!

The Statutes relating to "houses of religious worship" enact that "portions of such houses appropriated for purposes other than religious worship, shall be taxed at the value thereof to the owners of the houses."

At Puritan "Chapel" a woman lectures upon "the development of character in schools—tickets 15 cents." All the while there are spacious entries and halls, unused; in the High-School Building, which cost a Quarter-Million; that might seem pecu-

liarly appropriate for such disquisitions, were Schools the proper place for developing "character." "Suffer little children to come unto me!" at fifteen cents each.

Yet again,—at Jeru ?—salem "Church" a Concert is advertised of "Mendelssohn Four Part Songs," "with Cornet and Violin Solos, Songs, Duets, and Readings. Tickets 25 cents." It is unquestionably according to the canons to "make a joyful noise unto the Lord!" but that the "noise" should be in four parts argues a division savoring of dissonance, and warrants a doubt as to the share that the Lord may have in it:—more especially when it is set to the tune of twenty-five cents! But—the while,—the Assessors, like Baal—were deaf! or had gone to Oak Bluffs! and, not being at hand, could not detect the "appropriation to purposes other than religious worship."

Once more we are among the Puritans; but, on this occasion, in a "Vestry;" and the "religious worship" is restricted within the somewhat contracted outlines of "English Literature and History." The theme is more dignified and the price is varied,—to correspond. For "Three Dollars"! you can spend your evenings at the Mermaid, with Shakespeare and Ben Jonson; sip at the wells of English,—pretty thoroughly defiled by the minor play-wrights of the Elizabethan age; or go on a jaunt with Chaucer's pilgrims. Waiving inquiry into the present validity of the Apostolic injunction:—"Let Woman keep silence in the churches!" it may not be impertinent to ask whether she should hasten to uplift her voice in a recital of the Wife of Bath's Tale!

And, still! no "portion of such house" not even that "vestry," is "taxed, at the value thereof, to the owners."

In the opinion of your *Secretary*, you are imperatively required, by every dictate of reason,—every sentiment of self-respect, to recover the sums that have been unjustly extorted from you. Acquiescence in such exactions may not lead to greater wrong: but it would be an admission, on your part, that Horticulture is not a "Science"; or that you are not "advancing" it,—the "purpose" for which you were chartered. And,—if you are *not* fulfilling the objects of your organization;

the sooner that you dissolve the Corporation, and cease flaunting an imposture before the Community;—the better for your own good name and the common weal!

All which is respectfully submitted, by

EDWARD WINSLOW LINCOLN,

Secretary.

Horticultural Hall,

Worcester, Massachusetts, Nov. 2d, A. D. 1881.